Announcement

The Japanese Society of Coleopterology and the Coleopterists' Association of Japan will be amalgamated into a single society in 1989. The new society will inherit its name from the former, and will publish *Elytra* founded in November 1973 as its official journal, and *Coleopterists' News* founded in February 1968 as its newsletter. The newsletter *Sayabane*, previously issued by the "old" Japanese Society of Coleopterology, will be incorporated into *Coleopterists' News*.

The *Elytra* will appear twice a year, in May and November, each number comprising more than 50 pages of original articles devoted to the coleopterology as well as new collecting records and reviews of books and papers of particular interest. *Coleopterists' News* will be issued four times a year at somewhat irregular intervals. It is all in Japanese, and will contain proceedings of the Society and various brief notes on Japanese and foreign beetles. If the financial condition is good, the Society will occasionally publish *Check-list of Coleoptera of Japan*, which has been compiled by the Coleopterists' Association of Japan since 1976. Contributions from members to all these publications will be warmly welcomed.

I wish to thank Mr. Sumao KASAHARA, who is the best artist of our members as well as a specialist of ground-beetles, for drawing a new design on the cover of our *Elytra*.

Dr. Shun-Ichi UÉNO
President
Japanese Society of Coleopterology

会　告

日本鞘翅目学会と甲虫談話会は，1989年から合体することになりました．新会名は日本鞘翅学会とし，英文では旧日本鞘翅目学会のものを受け継いで，Japanese Society of Coleopterology と呼ぶことになります．

日本鞘翅学会の会誌は *Elytra* を引き継ぎ，5月と11月の2回刊行します．予算上の総ページ数は100ページが限度ですが，寄付金や超過ページ代を活用して，できるだけ充実した紙面にするよう心掛けたいと思います．また，短報や書評も取りあげて，空白のページをできるだけなくしたいと考えています．

一方，「甲虫ニュース」と「さやばね」は統合して，年4回やや不定期に「甲虫ニュース」をお届けします．内容は，原則的に従来のものを踏襲しますが，会務報告や大会，例会などの記事も盛りこんでいく予定です．また，財政的な余裕があれば，「日本産甲虫目録」も随時，刊行するつもりです．

新しい日本鞘翅学会の順調な発展は，専門の研究者とアマチュア同好者との協調を促進し，全体として日本の甲虫学を進歩させるためにぜひとも必要です．会員の皆さまに，今後なお一層のご協力をお願いいたします．

日本鞘翅学会会長

上野俊一

Elytra, Tokyo, 17 (1): 3–7, May 15, 1989

A New Genus and Species of Carabid Beetle Allied to *Damaster* (Coleoptera, Carabidae) from Yunnan, Southwest China

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Abstract A new genus of the subtribe Carabina belonging to the group Multistriati is established under the name of *Protodamaster*, with the new type species, *Protodamaster aesculapius*, from Yunnan, Southwest China.

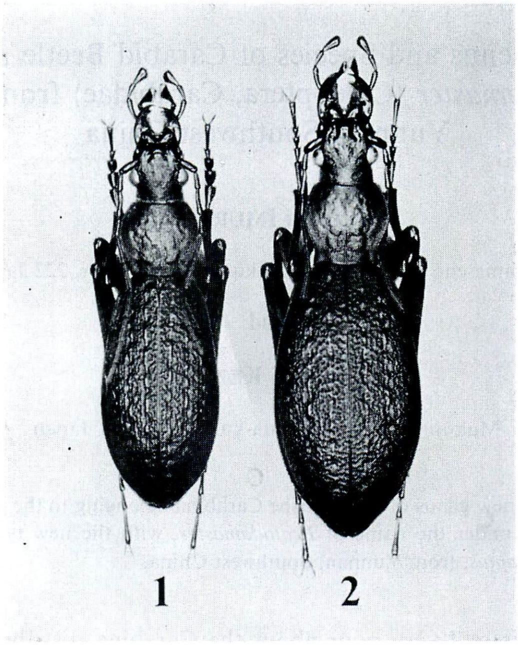
Our knowledge is still very poor about the Carabina distributed in China, with the exception of a few famous groups such as *Coptolabrus*. Recently, we had an opportunity to examine very unique carabid beetle collected at Tali, Yunnan, Southwest China. Judging from the genitalic features, it belongs to the group Multistriati, and is closely allied to the genus *Damaster* KOLLAR (sensu ISHIKAWA, 1986). In this paper, it will be described as a new genus and new species. It bears not a few primitive characters regarded as plesiomorphic conditions of the Carabina, and is considered to be an ancestral form of *Damaster*.

Before going further, we wish to express our deep gratitude to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for reviewing the original manuscript. Thanks are also due to Mr. Yoshiaki FURUMI for his kind help.

Genus ***Protodamaster*** IMURA et KEZUKA, nov.

Type species: *Protodamaster aesculapius* IMURA et KEZUKA, gen. et sp. nov.

The present new genus belongs to the group Multistriati and is closely allied to the genus *Damaster* KOLLAR (sensu ISHIKAWA, 1986), but is discriminated from the latter by the following characters: 1) apical segments of galeae moderately concave above, but not so conspicuously as in *Damaster*, with the dorsal margins not emarginate in apical halves nor sharply edged; 2) penultimate segments of labial palpi multisetose, with 5–7 setae on each segment; 3) apical margin of labrum only feebly emarginate in ♂, though moderately so in ♀; 4) pronotum uneven and scabrous on the surface, and scattered with rather dense granules except for the centre; 5) preapical emargination of elytra faintly recognised in both sexes; 6) striae between elytral in-



Figs. 1–2. *Protodamaster aesculapius* IMURA et KEZUKA, gen. et sp. nov., from Yunnan, Southwest China; 1, ♂ (holotype); 2, ♀ (allotype).

tervals composed of deep, irregularly shaped foveoles which are contiguous with one another to form unusually rough elytral surface, and intervals irregularly scattered with rather dense granules as a whole; 7) prepisterna impunctate, sparsely scattered with microgranules.

Protodamaster aesculapius IMURA et KEZUKA, sp. nov.

(Figs. 1–7)

Length (from apical margin of labrum to apices of elytra): 27.1–30.8 mm. Width: 8.7–10.7 mm.

Black, mat; pronotum with weak blue-purplish lustre; bottoms of elytral foveoles and elytral margins partly with faint green-purplish lustre.

Head excepting mandibles ca. 1.1 times as long as wide; apical margin of labrum feebly emarginate in ♂, moderately so in ♀; frontal impressions shallowly recognised in ♂, rather deeply concave in ♀; frons feebly convex above, with surface foveolate and irregularly wrinkled; dorsal surface of head behind eyes irregularly and densely scattered with punctures and microgranules; retinaculum of right mandible well developed, its posterior tooth being larger than the anterior; apical segments of galeae moderately concave above, though not so conspicuously as in *Damaster*, with dorsal margins not emarginate in apical halves nor sharply edged; apical hooks of laciniae

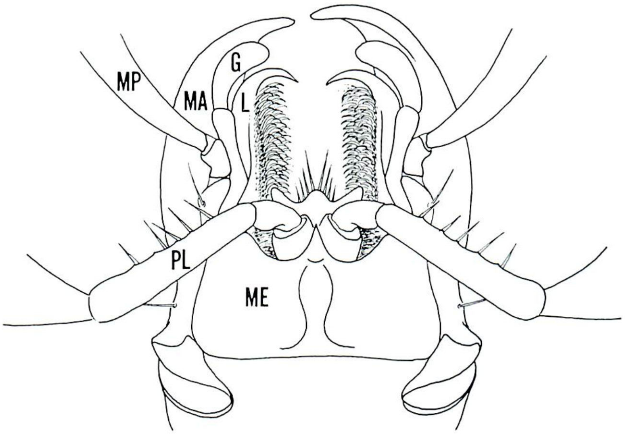
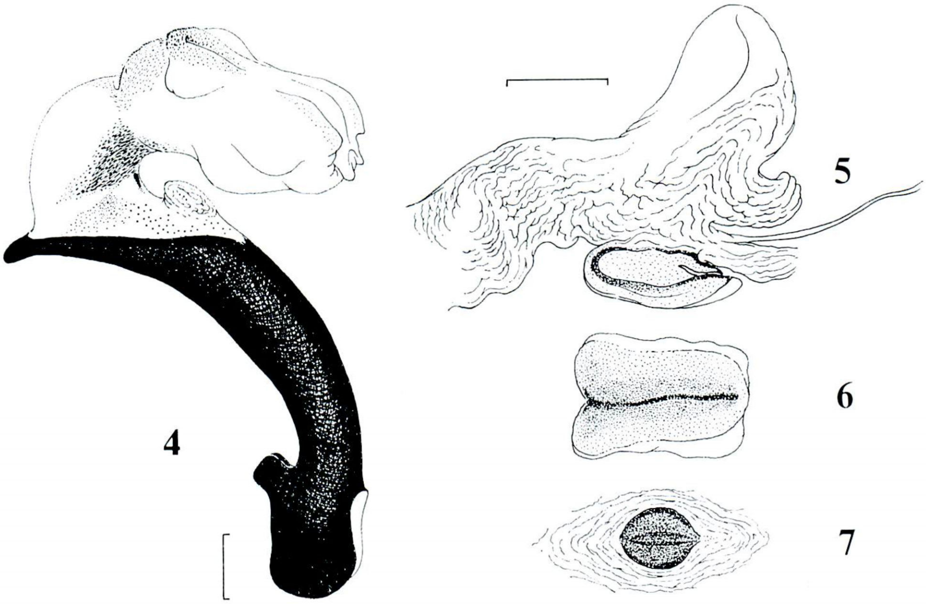


Fig. 3. Apical part of head (♂, ventral view) of *Protodamaster aesculapius* IMURA et KEZUKA, gen. et sp. nov., from Yunnan, Southwest China; MA, mandible; G, apical segment of galea; L, lacinia; MP, maxillary palpus; PL, penultimate segment of labial palpus; ME, mentum.

strongly bent inwards, obviously extending beyond galeal apices, more conspicuously in ♂; apical segments of palpi triangularly dilated, more widely in ♂; penultimate segments of labial palpi multisetose, with 5–7 setae on each segment; median tooth of mentum sharply pointed, rather distinctly extending anteriad; antennae barely reaching middle of elytra in ♂ and slightly extending to basal third in ♀, without hairless ventral depressions.

Pronotum subcordate, ca. 0.9 times as long as wide, widest a little before the middle; apical margin roundly emarginate; front angles obtuse, becoming a little pointed in ♂, gently rounded in ♀; sides gently arcuate in front, rather weakly sinuate behind, then almost parallel or slightly dilated before hind angles; lateral margins clearly bordered, becoming narrower towards front angles, with a pair of marginal setae on the centre; hind angles rather sharply protrudent postero-laterad, with the apices obliquely bent ventrad; basal margin evenly bisinuate; disc slightly convex above, with irregular wrinkles and foveoles to form uneven and scabrous surface, which is scattered with rather dense granules except for the centre; median longitudinal line very narrow and shallowly impressed, partly becoming unclear; basal foveae deep.

Elytra elongate-oval, ca. 1.8 (♀)–2.0 (♂) times as long as wide, widest a little behind the middle, strongly convex above especially in ♀; preapical emargination faintly recognised in both sexes; primary intervals indicated by weakly raised narrow costae frequently interrupted by relatively large, deep foveoles, each usually with a small granular projection at its centre; secondary intervals barely recognised as irregular rows of small callosities; tertiary intervals much weaker than secondaries or hardly recognisable; each interval irregularly scattered with rather dense granules as a whole; striae between intervals composed of deep, irregularly shaped foveoles which are con-



Figs. 4–7. Genital organ of *Protodamaster aesculapius* IMURA et KEZUKA, gen. et sp. nov., from Yunnan, Southwest China; 4, male genitalia (right lateral view); 5, female genitalia (right lateral view); 6, outer plate of vaginal apophysis (ventral view); 7, inner plate of vaginal apophysis. Scale: 1 mm.

tiguous with one another to form unusually rough elytral surface; granules of umbilicate series sparsely set in a single row barely reaching elytral apices.

Prepisterna impunctate, sparsely scattered with microgranules; sides of sternites granulate and asperous; sternal sulci completely and strongly carved; metacoxa trisetose in a male paratype and at the right side of the holotype, but bisetose (without anterior seta) in a female paratype (allotype) and at the left side of the holotype; legs slender and very long; basal three segments of male foretarsi dilated, with hair pads on the ventral surface.

Male genitalia with unilobate ostium lobe and less developed aggonoporius, bearing a close resemblance to those of the genus *Damaster*, especially to those of *Damaster* (s. str.) or of *Acoptolabrus*. Female genitalia with inner plate of vaginal apophysis well developed, walnut-shaped, and strongly sclerotized; outer plate subquadrate, with anterior margin gently rounded, sides gradually dilated posteriad, posterior margin subtriangularly re-entrant at middle.

Holotype: ♂, near Tali, Yunnan Prov., Southwest China, 11 ~ 17–VI–1987.

Paratypes (including allotype): 1 ♂, 1 ♀, the same data as for the holotype.

The holotype is preserved in the collection of the National Science Museum (Nat. Hist.), Tokyo. The paratypes are preserved in the private collection of H. KEZUKA, the junior author.

要　　約

井村有希・毛塚尚利：中国雲南省より発見されたマイマイカブリ属に近縁なオサムシの1新属新種．——中国雲南省大理付近で発見されたオサムシの1種を新属新種として記載した．本種は多条オサムシ群に属し，マイマイカブリ属にきわめて近縁で，とくに雄交尾器の構造はマイマイカブリ亜属およびクビナガオサムシ亜属のものに近く，これらの祖先型に近い形態を有するものと思われる．

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Elytra, Tokyo, **17** (1): 8, May 15, 1989

Some Records of Aquatic Coleoptera from the Daitô Islands, the Ryukyus

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No aquatic Coleoptera have ever been recorded from the Daitô Islands, the Ryukyus. Thus, all the species recorded herein are new to the fauna of the Daitô Islands, though they are common and widespread ones. The abbreviations used for localities are as follows: K=Kita-daitô-jima, M=Minami-daitô-jima.

Family Dytiscidae

Guignotus japonicus (SHARP, 1873)
  1 ex., M, 24–VII–1965, Y. HAMA leg.
Hydaticus rhantoides SHARP, 1882
  6 exs., M, 26∼27–VII–1965, Y. HAMA leg.
Cybister tripunctatus orientalis GSCHWENDTNER, 1931
  1 ex., K, 5–VII–1987, Y. KUSUI leg.

Family Gyrinidae

Dineutus orientalis (MODEER, 1776)
  4 exs., M, 27–VII–1965, Y. HAMA leg.; 4 exs., K, 5–VII–1987, Y. KUSUI leg.

Family Hydrophilidae

Dactylosternum abdominale (FABRICIUS, 1792)
  2 exs., K, 5–VII–1987, Y. KUSUI leg.
Paracymus evanescens SHARP, 1890
  1 ex., M, 25–VII–1965, Y. HAMA leg.; 3 exs., K, 5–VII–1987, Y. KUSUI leg.
Enochrus esuriens (WALKER, 1858)
  1 ex., K, 5–VII–1987, Y. KUSUI leg.
Helochares pallens MACLEAY, 1833
  1 ex., M, 24–VII–1965, Y. HAMA leg.
Sternolophus rufipes (FABRICIUS, 1792)
  5 exs., M, 26–VII–1965, Y. HAMA leg.; 1 ex., K, 5–VII–1987, Y. KUSUI leg.
Hydrophilus bilineatus cashimirensis REDTENBACHER, 1892
  1 ex., M, 26–VII–1965, Y. HAMA leg.; 2 exs., K, 5–VII–1987, Y. KUSUI leg.
Regimbartia attenuata (FABRICIUS, 1801)
  1 ex., M, 26–VII–1965, Y. HAMA leg.

Elytra, Tokyo, **17** (1): 9–18, May 15, 1989

Systematic Position of the Trechine Genus *Eocnides* (Coleoptera, Trechinae)[1]

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Abstract A new species of the trechine genus *Eocnides* is described from northern Sichuan in central China under the name of *E. fragilis*. Based upon the male genitalic characters of this new species, the genus is transferred from the Cnidina of the tribe Perileptini to the Trechina of the tribe Trechini.

Eocnides is a poorly known trechine genus erected by JEANNEL (1954, p. 10) for a single female specimen of a very strange Assamese species. Unable to see any male specimen, he hesitated for about twenty years in deciding its systematic position, and finally resolved to place it at the side of the South and Central American genus *Cnides* in his tribe Homaloderini. Four years later, he (1958, p. 733) erected Cnidina in the tribe Trechodini and placed *Cnides* and *Eocnides* in the new subtribe. He revised his classification of the Trechinae in 1964 (p. 233), raising the Trechodini to a subfamily equivalent to the Trechinae and the Cnidina to one of its tribes. This arrangement can be disputed, since the two related groups Perileptini and Cnidini were placed in two different subfamilies. In my own view, the Cnidina should belong to the tribe Perileptini, which is the most primitive of the three tribes of the subfamily. However, the present paper is not concerned with the problem of the major classification of the Trechinae. Its purpose is to clarify that *Eocnides* does not belong to the Cnidina and therefore is not a close relative of *Cnides*.

I already noticed this fact in 1981 (p. 60, foot-note), when describing the second Asian genus of the Trechodini from the eastern Himalayas. It was verified beyond doubt on an examination of male genitalia of an *Eocnides*. At that time, however, only the female type of *E. assamensis* from northeastern India and a male specimen from central China were available for study, and though the latter seemed specifically different from the former through my direct comparison made at the Muséum National d'Histoire Naturelle, Paris, I was reluctant to describe it as a new species since the two were very similar to each other at least superficially.

Recently, five more specimens of an *Eocnides* were collected in Sichuan by Hiroshi MIYAMA and submitted to me for study. This collection contained both males and females, and thus we had at last on hand the two sexes of an *Eocnides* from the same

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[1] This study is supported in part by the Grant-in-aid for Scientific Research No. 63540603 from the Ministry of Education, Science and Culture, Japan.

population. MIYAMA's collection also gave us definite and reliable information on the habitat of this isolated trechine beetle. Since the Chinese form closely resembles the Assamese as mentioned above, it was necessary to make a direct comparative study based upon the same sex for determining the true identity of the former. I was able to do this through the courtesy of the Muséum National d'Histoire Naturelle, and definitely confirmed specific independency of the Chinese trechine.

In the present paper, I am going to give first a revised account of the genus *Eocnides*, whose original description is not sufficient to illustrate this very strange trechine, then a full description of the new Chinese species under the name of *E. fragilis*, and in comparison with it a redescription of *E. assamensis* based upon the type specimen. The genus will be transferred from the Cnidina of the tribe Perileptini to the Trechina of the tribe Trechini. It is difficult at present to determine its affinity within the subtribe Trechina, but a brief comment will be made on its presumable relationship. The abbreviations used herein are the same as those explained in other papers of mine.

Before going into further details, I wish to express my hearty thanks to Mr. Hiroshi MIYAMA, whose keen eyes for ground-living beetles at last brought forth long awaited fresh material of the problematical trechine beetle. Deep indebtedness should also be expressed to Dr. A. DESCARPENTRIES, Dr. Georges G. PERRAULT and Mlle. Hélène PERRIN, who kindly took the trouble of making arrangement for the loan of the type specimen of *Eocnides assamensis* JEANNEL.

Genus ***Eocnides*** JEANNEL, 1954

Eocnides JEANNEL, 1954, Rev. fr. Ent., **21**, p. 10; type species: *Eocnides assamensis* JEANNEL, 1954; 1958, Ent. Arb. Mus. Frey, Tutzing, **9**, pp. 732, 733. —— UÉNO, 1981, Annot. zool. japon., **54**, p. 60, foot-note. —— CASALE & LANEYRIE, 1982, Mém. Biospéol., **9**, pp. 9, 35.

Medium-sized trechines somewhat similar in general appearance to certain bembidiines. Body elongate, subparallel-sided, depressed, and glabrous except for abdominal sternites, with long antennae and legs; tactile setae on body surface mostly long; inner wings fully developed; colour black or brown, with pale appendages.

Head transverse, with protruding eyes and posteriorly contracted genae, the latter of which are completely glabrous and separated from narrow neck by deep constriction; frontal furrows entire, clearly impressed, rather weakly curved in front, widely divergent behind, and not angulate at middle; two pairs of rather closely situated supraorbital pores present on lines more or less convergent posteriad, the anterior one being slightly behind the mid-eye level and foveolate. Labrum transverse, widely and simply emarginate at apex, sexsetose. Mandibles short and stout, sharply hooked at apices, tridentate though the premolar tooth is not sharply defined on the right mandible. Mentum separated from submentum by a distinct labial suture, the former bearing a broad tooth in apical emargination, which is distinctly cleft at the tip, the latter bearing six setae, of which the sublateral pair are very long and situated near buccal fissures; ligula narrow and porrect, octosetose; paraglossae slender, extending

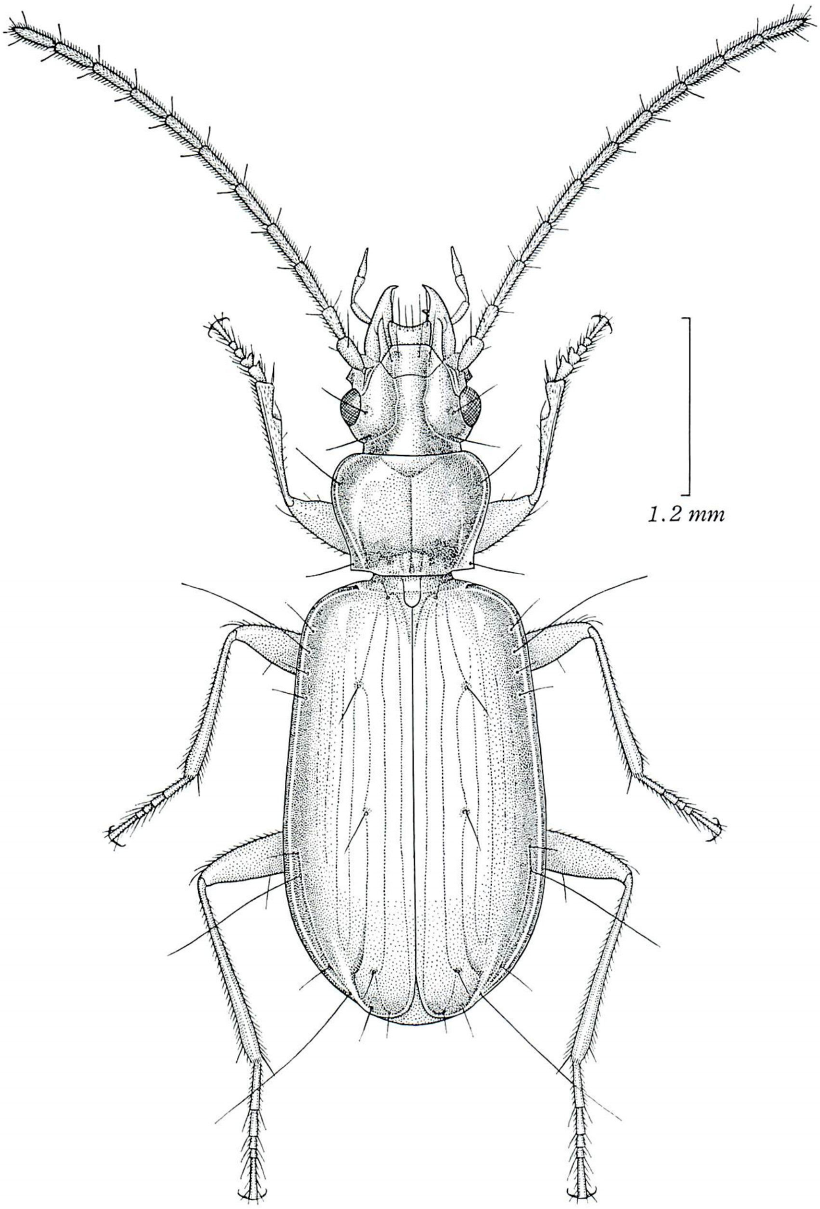

Fig. 1. *Eocnides fragilis* S. UÉNO, sp. nov., ♂, from Xiajijie Hai at Jiuzhaigou.

much beyond ligula. Palpi not long; penultimate segment moderately dilated towards apex and completely glabrous in maxillary palpus, feebly dilated towards apex and quadrisetose in labial palpus; apical segments elongated subconical, about as long as the penultimate in labial palpus but much longer than that in maxillary palpus.

Antennae filiform, long and slender.

Pronotum small, transverse, with the sides widely reflexed behind the widest part, arcuate in front and briefly sinuate just before hind angles which are almost rectangular; two pair of marginal setae situated slightly before the widest part and slightly before hind angles, respectively; apical impression distinct, widely divergent V-shaped and smooth; median line deeply impressed, widening in basal area; basal transverse impression deep and continuous, somewhat uneven at the bottom; basal foveae very large, subtriangular, extending anteriorly along the side borders; postangular carinae obtuse; basal area narrow, more or less notched along the basal border. Scutellum small and narrow, though distinct.

Elytra large and elongate, subparallel-sided though widest behind the middle, and depressed on the disc, with square shoulders; prehumeral borders not reaching basal peduncle, being interrupted at the site of the base of stria 5; sides rather narrowly reflexed throughout; striae distinctly impressed on the disc but obsolete at the sides, with the exception of stria 8 which is deeply impressed behind the middle set of marginal umbilicate pores; stria 2 extending to apex without forming apical anastomosis with stria 3; scutellar striole long, deeply impressed, and close to suture; apical striole short but deep, strongly arcuate inwards and joining stria 3; intervals smooth, apical carina obtuse; two setiferous dorsal pores present on stria 3 (frequently on anastomoses of striae 3 and 4), and none on stria 5; preapical pore situated on apical declivity and adjoining stria 2; apical pores normal, though the anterior one is situated rather backwards; marginal umbilicate pores regular and aggregated, the four pores of the humeral set being ranged equidistantly.

Prosternum glabrous; metasternum with a few hairs; sternites 2–5 each covered with rather long hairs at the median part; anal sternite provided with a pair of setae in ♂, with two pair of setae in ♀. Legs fairly long and slender; protibiae straight, gently dilated towards apices, distinctly grooved on the external face, and wholly pubescent on the anterior face; tarsi not very long, segment 1 about as long as segments 2–4 together in both meso- and metatarsi, segment 4 with a long ventral apophysis in pro- and mesotarsi; in ♂ two proximal segments of each protarsus widely dilated, stoutly produced inwards at apices, and furnished beneath with sexual adhesive appendages.

Male genital organ very small. Aedeagus tubular though widely membraneous on the dorsal surface, with completely closed basal part, whose orifice is situated at the ventral side; sagittal aileron present; apical lobe symmetrical, long and narrow. Inner sac armed with a large asymmetrical copulatory piece but devoid of sclerotized teeth. Styles large and broad, left style devoid of ventral apophysis, each bearing four or five setae at apex.

Range. Northeastern India and central China.

Notes. Because of the characteristic conformation of the aedeagal basal part, the genus *Eocnides* belongs to the tribe Trechini beyond all doubt. As was conclusively demonstrated by Jeannel (1958, pp. 732–734), the aedeagal basal part is widely open between two sagittal lobes in the members of *Cnides* from Central and South America. This feature is currently regarded as a peculiarity of the tribe Trechodini, but is also found in the tribe Perileptini. JEANNEL misunderstood the aedeagal structure of perileptines and placed the tribe at the side of the Trechini (*e.g.*, 1964, p. 233). Actually, however, the basal part of the perileptine aedeagus is membraneous except for the ventral side, and can be regarded as the prototype that could have produced both the trechodine and the trechine types of aedeagi. JEANNEL was also wrong in considering that specific differentiation was clearly observed in the aedeagi of *Cnides* species. In reality, genitalic differentiation is not pronounced in *Cnides* as in the Perileptini, though there is a considerable difference between the two in the grade of sclerotization of aedeagal walls, and the spiralled copulatory piece extant in the former is homologous with the thin, poorly sclerotized flagellum commonly found in the latter.

Thus, *Cnides* should be associated with the Perileptini, and is phylogenetically remote from *Eocnides*, which indisputably belongs to the Trechini. It is, however, not easy to determine the true systematic position of *Eocnides* within the tribe. In my view, three major groups can be recognized within the Trechini. The largest of them is the Trechina, which may or may not include homaloderoid genera mainly distributed in the Southern Hemisphere. *Eocnides* could be regarded as a homaloderoid because of the tridentate mandibles, but mandibular dentition is not a decisive character for discriminating homaloderoid genera from trechoid ones. In fact, many genera belonging to the *Trechoblemus* group, which doubtless belongs to the Trechina, have a premolar tooth, at least on the right mandible. *Eocnides* may have a remote relationship to this genus-group because of similarities in the peculiar disposition of elytral apical striole, regularly aggregated humeral set of marginal umbilicate pores on elytra, pubescent protibiae, conformation of male genitalia, and so on, as well as in the mode of life in the case of oculate species (see Notes to *E. fragilis* sp. nov.). On the other hand, it is different from the latter in that the penultimate segment of maxillary palpus is completely glabrous, that the submentum is not fused with the mentum[2] and bears only six setae, that the body surface is glabrous except for abdominal sternites, and that the protibiae are externally grooved. There are exceptions to all these similarities and discrepancies, but so far as concerned with oculate species bearing fully developed hind wings, the differences noted above are decisive.

CASALE and LANEYRIE (1982, pp. 23–24) placed in the *Trechus* group such isolated genera with pubescent protibiae as *Altaiotrechus* IABLOKOFF-KHNZORIAN (1971, p. 155), *Antoinella* JEANNEL (1937, p. 83) and *Iberotrechus* JEANNEL (1920, p. 154; 1927, pp. 14, 104), an arrangement that had been first proposed in part by JEANNEL (1937, *loc. cit.*). Their opinion seems sound to me, and on this premise *Eocnides* could also be regarded as an isolated member of the same genus-group. If so, however, *Eocnides* is unique in the striation and chaetotaxy of the apical part of elytra, and cannot be associated with any of the genera hitherto known in the *Trechus* group.

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[2] JEANNEL (1954, p. 11) described that "chez *Eocnides* le labium est soudé," and this was regarded by CASALE and LANEYRIE (1982, p. 9) as a diagnostic feature of the genus. Actually, however, a complete labial suture is present in *Eocnides*.

For the time being, I prefer to place *Eocnides* in its own group, which represents an archaic type of the Trechina and has relationship to both the *Trechoblemus* group and the *Trechus* group.

Key to the Species

1 (2) Colour of body brown; prothorax smaller, PW/HW less than 1.20, EW/PW more than 1.55; eyes smaller, genae longer and more oblique; antennae longer; Sichuan .... *E. fragilis* S. UÉNO, sp. nov.
2 (1) Colour of body black; prothorax larger, PW/HW more than 1.20, EW/PW less than 1.55; eyes larger, genae shorter and less oblique; antennae shorter; Assam .... *E. assamensis* JEANNEL.

Eocnides fragilis S. UÉNO, sp. nov.

(Figs. 1–3)

Length: 4.60–5.10 mm (from apical margin of clypeus to apices of elytra).

Body elongate, with small prothorax and large elytra; integument thin, with unusually soft elytra. Colour brown, shiny, faintly iridescent on elytra; head black except for clypeus, buccal appendages and sometimes dorsum of neck which are brown; pronotal disc dark brown; palpi, antennae, epipleura, legs, and sometimes venter of hind body pale yellowish brown.

Head wider than long, depressed above, with protruding eyes and narrow neck; frontal furrows deeply impressed, especially before the post-eye level; frons and supra-orbital areas gently convex; microsculpture distinct, mostly consisting of transverse meshes; eyes not large but prominent, rather variable in size; genae oblique, two-fifths to a half as long as eyes, almost straightly convergent towards neck constriction, though slightly and very briefly convex just before reaching it; antennae long and thin, reaching apical three-eighths of elytra, segment 2 about two-thirds as long as each of segments 3–7, which is subcylindrical and about 4.5 times as long as wide, segments 8–10 subequal in length to one another and slightly shorter than segment 7, terminal segment slightly longer than segment 3, obviously longer than scape but only three-fifths as wide as the latter.

Pronotum small, transverse, widest at about five-sevenths from base, and much more gradually narrowed towards base than towards apex; PW/HW 1.08–1.18 (M 1.13), PW/PL 1.32–1.42 (M 1.37), PW/PA 1.48–1.54 (M 1.51), PW/PB 1.28–1.33 (M 1.30); surface moderately convex at the antero-lateral parts but widely depressed on the disc, usually with an indistinct round depression on each side slightly behind the level of the widest part; microsculpture formed by fine transverse lines, which are partially irregular or degenerated; sides sharply reflexed throughout, the reflexed border becoming broader posteriorly, strongly and narrowly rounded in front, very slightly arcuate or nearly straight behind middle, and slightly sinuate at about basal sixth; apex very slightly emarginate, with front angles rounded and hardly produced; base wider than apex, PB/PA 1.16–1.20 (M 1.17), slightly arcuate at middle, and slightly sinuate on each side inside hind angle, which is either rectangular or somewhat obtuse; median line deeply impressed on the disc, not reaching apex; transverse impressions and basal foveae as described under the genus.

Elytra elongate and depressed, widest at about apical two-fifths, and more gradually narrowed towards bases than towards apices; EW/PW 1.56–1.69 (M 1.63), EL/EW 1.57–1.65 (M 1.62); surface flat on the disc, steeply declined along the sides, with gentle apical declivity; microsculpture mostly obliterated, though consisting of fine transverse lines; shoulders square, with prehumeral borders almost perpendicular to the mid-line at the innermost portions; sides straight in front but gently arcuate in apical third, each with a shallow preapical emargination; apices separately rounded, forming a large re-entrant angle at suture; striae shallow and impunctate, becoming shallower and almost obsolete towards the side, 1–3 distinctly impressed though stria 3 is sometimes interrupted between the base and anterior dorsal pore, others more or less obsolete in basal area with the exception of stria 5 which is sometimes traceable to the base; scutellar striole sharply carved; apical striole as described under the genus: stria 3 with two setiferous dorsal pores at about basal 1/5 and about middle or a little behind that level, the anterior one always situated on anastomosis of striae 3 and 4.

Ventral surface and legs as described under the genus.

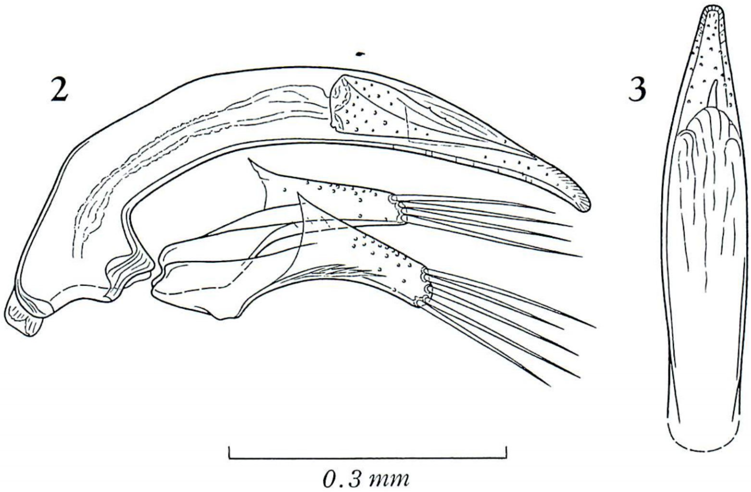
Male genital organ very small though moderately sclerotized. Aedeagus only a little more than one-fifth as long as elytra, very slender, moderately arcuate, and gradually narrowed apicad from behind middle, with small dilated basal part rather abruptly curved ventrad; basal orifice small, with the sides shallowly emarginate; sagittal aileron small though distinct; apical lobe long and narrow, slightly curved ventrad and blunt at the tip in lateral view, gradually narrowed towards subtruncate apex in dorsal view; ventral margin widely arcuate in profile. Copulatory piece large, about three-eighths as long as aedeagus, large and rolled in proximal half, but acuminate and becoming acicular at the apex. Styles large and broad, left style obviously larger than the right, each bearing four long stout setae at the apex; in the holotype, a fifth seta present on the left style.

Type series. Holotype: ♂, allotype: ♀, paratypes: 1 ♂, 2 ♀♀, 25–VII–1988, H. MIYAMA leg. Deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo.

Type locality. Xiajijie Hai, ca. 2,600 m alt., at Jiuzhaigou of Nanping Xian in northern Sichuan, central China.

Further specimen examined. 1 ♂, Tu-pa-keo, 7,400 ft. alt., Szechwan (=Sichuan), 3~9–IX–1929, H. STEVENS leg.

Notes. It is worth noting that the elytra are unusually thin and soft in this new



Figs. 2–3. Male genital organ of *Eocnides fragilis* S. UÉNO, sp. nov., from Xiajijie Hai at Jiuzhaigou; left lateral view (2), and apical part of aedeagus, dorso-apical view (3).

species. When the specimens of the type series were brought in by MIYAMA, I thought that all were more or less teneral. However, dissection of male specimens revealed that their genital organs were thoroughly sclerotized. Since sclerotization of male genitalia in trechine beetles is always delayed than that of body surface, possession of hardened genitalia can be regarded as an infallible indication of maturity. This reminds us of *Apoplotrechus* ALLUAUD (1915, p. 286; JEANNEL, 1926, pp. 402, 437) of the Perileptini, whose integument is also thin and soft.

The type locality of this interesting new species, Xiajijie Hai, is a small lake lying in a valley of Jiuzhaigou surrounded by high mountains exceeding 4,000 m in height. It is situated near the Gansu border at the northern end of Sichuan Sheng. According to MIYAMA, all the specimens of the type series were found from under stones lying on a silty water-edge of the lake together with some bembidiines. *Eocnides* itself looked like a bembidiine until it was examined under a magnifying glass.

Eocnides assamensis JEANNEL, 1954

Eocnides assamensis JEANNEL, 1954, Rev. fr. Ent., **21**, p. 11, fig. 1; type locality: Naga Hills. —— CASALE & LANEYRIE, 1982, Mém. Biospéol., **9**, p. 35, fig. 2.

Length: 5.00 mm (from apical margin of clypeus to apices of elytra).

Closely allied to *E. fragilis*, but the integument is more heavily sclerotized, the coloration is much darker, the prothorax is larger and more strongly contracted in front and behind, the eyes are larger, and the antennae are shorter.

Colour black, shiny, faintly iridescent on elytra; neck, lateral reflexed margins of pronotum and elytra, scutellum, apical portion of each elytron, and epipleura more or less brownish; buccal appendages including mandibles, antennae and legs yellowish brown to light reddish brown.

Head with larger eyes, less oblique genae and a little narrower neck than in *E. fragilis*; eyes large and protruding; genae short, only one-third as long as eyes, hardly convex, and rapidly convergent towards neck constriction; mandibles somewhat stouter though acutely hooked at apices; antennae shorter, probably reaching apical four-ninths of elytra,[3] scape a little narrower than in *E. fragilis*, each of middle segments a little more than 4 times as long as wide. Pronotum larger and more strongly contracted at the two ends, especially at apex, than in *E. fragilis*, widest at about two-thirds from base, with the sides more widely rounded in front, feebly arcuate even behind middle, and more deeply sinuate at about basal seventh; PW/HW 1.22, PW/PL 1.42, PW/PA 1.60, PW/PB 1.34, PB/PA 1.19; other features as in *E. fragilis*. Elytra similar to those of *E. fragilis*, but much more heavily sclerotized, widest at about four-ninths from apices, and with more sharply defined striation; EW/PW 1.54, EL/EW 1.61; striae 1–3 sharply impressed throughout,[4] stria 4 distinct in apical half but obsolete before the level of anterior dorsal pore, 5–7 very slight and only partially perceptible as vestiges; stria 3 with two setiferous dorsal pores at 1/5 and 5/9 from base respectively, the anterior pore being situated on anastomosis of striae 3 and 4.

Male unknown.

Type depository. Laboratoire d'Entomologie, Muséum National d'Histoire Naturelle, Paris.

Specimen examined. 1 ♀ (holotype), Naga Hills, 5,000 ft. alt., Assam, NE India, 9–IV–1924, S. N. Chatterjee leg.

Note. Nothing has been known about details of the type locality and habitat of *E. assamensis*. Judging from its habitus, however, this trechine must be hygrophilous, most probably living on water edges of mountain streams like many bembidiines.

要　　約

上野俊一：ヒゲナガチビゴミムシの帰属.——ヒゲナガチビゴミムシ属*Eocnides*は，アッサムのナガ山地で得られた雌の1標本に基づいて設けられたものである．その所属は長いあいだ確定しなかったが，いちおうホソチビゴミムシ族Perileptiniのスベホソチビゴミムシ亜族Cnidinaに置かれてきた．しかし，見山 博氏によって最近，中国の四川省で採集された第二の種を詳しく検討した結果，この属はチビゴミムシ族Trechiniのチビゴミムシ亜族Trechinaに含まれることが明らかになった．亜族のなかで類縁関係のとくに近い属群は知られていないが，アトスジチビゴミムシ群や狭義のチビゴミムシ群に似た点があり，比較的，原始的な地位にある孤立した属であろうと考えられる．

この論文では，中国産の種に*Eocnides fragilis*という新名を与えて記載するとともに，属基準種の*E. assamensis* Jeannelを正基準標本に基づいて再記載し，あわせて属自体の再記載も行なった．

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3) The segments 6–11 of the left antenna and 9–11 of the right are lost from the holotype, but the remaining segments clearly show that the antennae are shorter in *E. assamensis* than in *E. fragilis*.

4) The third stria is complete to the base, though it was described by Jeannel (1954, p. 12) as "la 3^{e} [strie] obsolète en avant du premier pore discal."

fragilis という新名は，この新種の皮膚が異常に薄く，とくに上翅が軟らかくて一見，未熟な個体のようにみえることに基づくものである．

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Bembidion gebleri GEBLER (Coleoptera, Carabidae) and its New Relative

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Abstract The bembidiine carabid beetles related to *Bembidion* (*Plataphus*) *gebleri* GEBLER are dealt with. The three subspecies of *B. gebleri*, *gebleri* (s. str.), *persuasum* and *edai*, are redescribed, and *B. nakanei* JEDLIČKA is regarded as a synonym of *B. g. edai*. A new related species is described from Japan under the name of *B. shilenkovi*.

Up to the present, more than fifteen species of the subgenus *Plataphus* have been described or recorded from the Far East. Of these, *Bembidion* (*Plataphus*) *gebleri* GEBLER (1833, p. 275) is one of the most important and difficult species both taxonomically and zoogeographically, since its distributional range covers the eastern half of Siberia and extends to North America across the Bering Straits. *Bembidion persuasum* described by NETOLITZKY (1938, p. 38) from Vladivostok has been regarded sometimes as a synonym of or as a geographical race of *B. gebleri*. There still remain some problems concerning their systematic status and identity of related species occurring in the Japanese territory.

In order to clarify these problems, it is necessary to investigate type specimens and make a direct comparative study, especially of the details of microsculpture and male genital organ. While visiting the Naturhistorisches Museum Wien in 1987, I was able to examine the type specimens of both "*B. persuasum*" and "*B. gebleri persuasum edai.*" Besides, I was given an opportunity to examine the type specimens of *B. nakanei* JEDLIČKA through the courtesy of Dr. BÍLÝ of the National Museum, Prague. Dr. SHILENKOV sent me for comparative study a short series of *B. gebleri* collected by himself in Altai and at the same time gave me valuable advice.

In this paper, I will redescribe *B. gebleri* including its two subspecies from the Far East, and will describe a new species from Japan under the name of *B. shilenkovi*.

The abbreviations used herein are as follows: HW – greatest width of head; PW – greatest width of pronotum; PL – length of pronotum, measured along the median line; PA – width of pronotal apex; PB – width of pronotal base; EW – greatest width of elytra; EL – greatest length of elytra; M – arithmetic mean; NSMT – National Science Museum (Nat. Hist.), Tokyo; NMW – Naturhistorisches Museum Wien; NMP – National Museum, Prague.

Before going further, I wish to express my deep gratitude to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for his advice and reading the manuscript of this paper. Thanks are also due to Dr. V. G. SHILENKOV of Irkutsk

State University for giving me useful information and supplying me with important material, and to Professor Masataka SATÔ of Nagoya Women's University, and to Messrs. Azuma ABE, Satoshi YAMAUCHI of Aomori Prefecture and LI Jingke of China for kindly supplying me with valuable material, and to Drs. Heinrich SCHÖNMANN and Manfred JÄCH of the Naturhistorisches Museum Wien and Alexander DOSTAL of Wien, and to Mr. Nobuki YASUDA of the Sôunkyô Museum for their kind help. Further, I am deeply indebted to Dr. Svatopluk BÍLÝ of the National Museum, Prague, for loan of the type specimens of *Bembidion nakanei* JEDLIČKA under his care. Finally, my hearty thanks are also due to my wife Eiko and daughter Asako for their kind help in the field work.

Bembidion* (*Plataphus*) *gebleri gebleri GEBLER, 1833

(Figs. 1, 3–5)

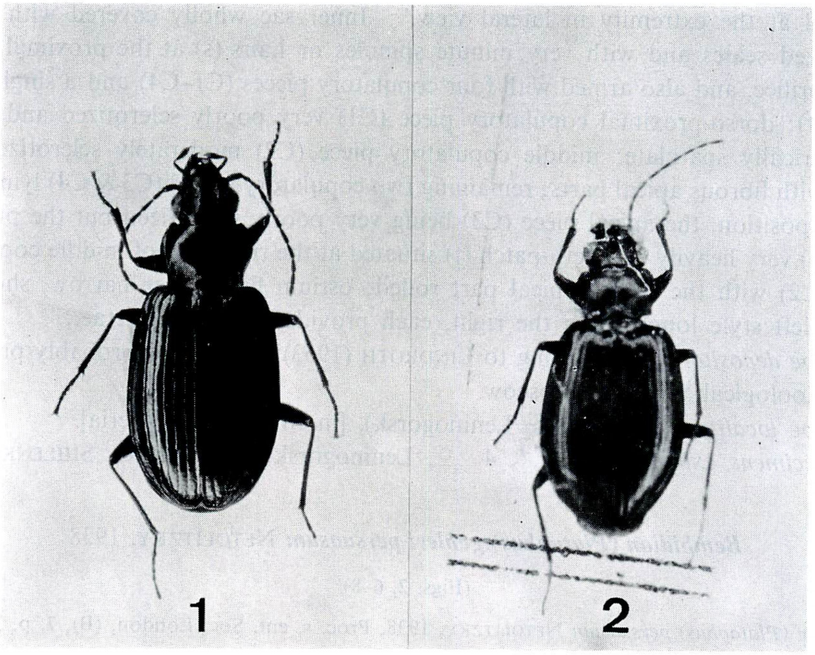
Bembidion Gebleri GEBLER (ESCHSCHOLTZ in lit.), 1833, Bull. Soc. imp. Natur. Mosc., **6**, p. 275.
Bembidion Gebleri: NETOLITZKY, 1942, Koleopt. Rdsch., **28**, p. 106.
Bembidion gebleri: LINDROTH, 1943, Ent. Tidskr., **63**, p. 9, fig. 6 e; 1963, Opus. ent. Suppl., **24**, p. 290, figs. 140 b, 141 b [*partim*].
Bembidion (*Peryphus*) *frigidum* SAHLBERG, 1880, K. Vet. Akad. Handl., **17**, p. 16.

Length: 4.6–5.5 mm (from apical margin of clypeus to apices of elytra).

Body flat. Black with bluish, rarely greenish lustre; elytra rarely with brownish lustre; labrum, antennae, palpi, most part of mandibles and legs blackish brown; apices of mandibles, and pro- and mesocoxae reddish brown.

Head rather large and wide without punctures; frontal furrows wide and almost parallel; eyes prominent; frons and supraorbital areas gently convex, the latter bearing two pair of supraorbital pores; anterior pore situated at the mid-eye level and close to each eye, the posterior one situated a little before the post-eye level; mandibles strongly hooked at apices; antennae filiform and fairly long, reaching basal third of elytra; relative lengths of antennal segments as follows:— I: II: III: IV: V: VI: XI= 1: 0.62: 0.93: 0.91: 0.95: 0.97: 1.08; microsculpture clearly impressed in both ♂ and ♀, and consisting of isodiametric meshes.

Pronotum transverse, slightly convex though rather flat in basal area, and widest at about 5/8 from base; PW/HW 1.24–1.30 (M 1.27) in 4 ♂♂, 1.24–1.33 (M 1.28) in 4 ♀♀; PW/PL 1.42–1.58 (M 1.52) in 4 ♂♂, 1.44–1.56 (M 1.50) in 4 ♀♀; PW/PA 1.37–1.42 (M 1.39) in 4 ♂♂, 1.30–1.39 (M 1.35) in 4 ♀♀; PW/PB 1.18–1.27 (M 1.22) in 4 ♂♂, 1.15–1.24 (M 1.20) in 4 ♀♀; apical margin widely emarginate, a little narrower than base; PA/PB 0.84–0.91 (M 0.88) in 4 ♂♂, 0.82–0.95 (M 0.88) in 4 ♀♀; sides briefly straight near apical angles, rather strongly arcuate at the widest part and moderately sinuate before hind angles; reflexed lateral borders very wide though becoming narrower towards apices; base nearly straight at the middle, slightly oblique on each side; apical angles produced, blunt at the tips, hind ones nearly rectangular with carinae close to lateral borders; a small rounded fovea rarely present on each



Figs. 1–2. —— 1, *Bembidion* (*Plataphus*) *gebleri gebleri* GEBLER. —— 2, *B.* (*P.*) *g. persuasum* NETOLITZKY (holotype).

side before middle; median line sharply impressed; anterior marginal setae situated at the widest part or a little before that level, posterior ones situated just in front of hind angles; basal foveae large and wide; the area between carina and bottom of basal fovea densely wrinkled; microsculpture consisting of isodiametric meshes in both ♂ and ♀.

Elytra oblong-ovate, widest at a level a little behind the middle, with the posterior part rather convex in lateral view; EW/PW 1.55–1.70 (M 1.65) in 4 ♂♂, 1.65–1.72 (M 1.68) in 4 ♀♀, EL/EW 1.37–1.47 (M 1.43) in 4 ♂♂, 1.38–1.51 (M 1.43) in 4 ♀♀; shoulders rounded; sides feebly divergent from behind shoulders to the widest part, and slightly emarginate before apices, with each marginal gutter terminating at the base of stria 5; apex of each elytron rounded, forming a small re-entrant angle at suture; striae entire, shallow and indistinctly crenulate; striae 6 and 7 always free at the posterior ends; scutellar striole long but shallow; intervals almost flat; apical striole deep, moderately curved, and joining stria 5 (cf. LINDROTH, 1963, p. 291, fig. 140 b); apical carina obvious though obtuse; two dorsal pores present on stria 3, situated at 3/8–2/5 and 7/10–3/4 from base respectively; microsculpture consisting of wide meshes partially forming very transverse ones in ♂, rather irregular wide or transverse meshes in ♀.

In ♀, anal sternite with two pair of setae on a straight transverse line.

Aedeagus elongate and regularly arcuate, with rather large basal part; apical part rounded at the extremity in lateral view.[1] Inner sac wholly covered with poorly sclerotized scales and with very minute spinules or hairs (s) at the proximal end of apical orifice, and also armed with four copulatory pieces (C1–C4) and a single teeth-patch (t); dorso-proximal copulatory piece (C1) very poorly sclerotized and almost symmetrically spatulate; middle copulatory piece (C2) moderately sclerotized, and rolled with fibrous apical parts; remaining two copulatory pieces (C3 & C4) lying at the ventral position, the apical piece (C3) being very poorly sclerotized but the proximal one (C4) very heavily so; teeth-patch (t) situated at the right side of middle copulatory piece (C2) with the ventro-apical part rolled; ostium flag rather narrow, short and vague; left style longer than the right, each provided with four setae.

Type depository. According to LINDROTH (1963), the type is probably preserved in the Zoological Museum, Moscow.

Type locality. Riddersk (=Leninogorsk), [in Mts. Altai, Siberia].

Specimens examined. 4 ♂♂, 4 ♀♀, Leninogorsk, Altai, V. G. SHILENKOV leg.

Bembidion (Plataphus) gebleri persuasum NETOLITZKY, 1938

(Figs. 2, 6–8)

Bembidion (Plataphus) persuasum NETOLITZKY, 1938, Proc. r. ent. Soc. London, (B), 7, p. 38; 1942, Koleopt. Rdsch., **28**, p. 106.

Bembidion persuasum persuasum: JEDLIČKA, 1965, Ent. Abh. Mus. Tierk. Dresden, **32**, p. 113.

Bembidion gebleri persuasum: FASSATI, 1954, Acta. Soc. ent. Cech., **50**, p. 82.

Bembidion gebleri: LINDROTH, 1963, Opusc. ent. Suppl., **24**, p. 290 [*partim*].

Length: 4.40 mm in ♂, 4.34 mm in ♀ (from apical margin of clypeus to apices of elytra).

Black with weakly bluish lustre; elytra with brownish lustre but hardly iridescent; labrum, antennae, palpi, mandibles and legs blackish brown; coxae and metatrochanters lighter than legs.

Head wide, without punctures; frontal furrows shallower than in the nominotypical form, wide, and reaching a little behind the mid-eye level; microsculpture consisting of isodiametric meshes in both ♂ and ♀.

Pronotum transverse, widest at about 2/3 from base; PW/HW 1.29 in ♂, 1.26 in ♀, PW/PL 1.22 in ♂, 1.19 in ♀, PW/PA 1.29 in ♂, 1.29 in ♀, PW/PB 1.22 in ♂, 1.19 in ♀; apical margin a little narrower than base; PA/PB 0.94 in ♂, 0.92 in ♀; sides moderately arcuate in front and distinctly sinuate before hind angles; reflexed lateral borders wide throughout; apical angles slightly produced, blunt at the tips, hind ones nearly rectangular or somewhat acute, with carinae; basal foveae narrower and deeper than in the nominotypical form, and with sparse wrinkles; in ♂, microsculpture consisting of very wide or transverse meshes but partially of wide meshes, especially on the disc; in ♂, microsculpture consisting of very wide meshes but partial-

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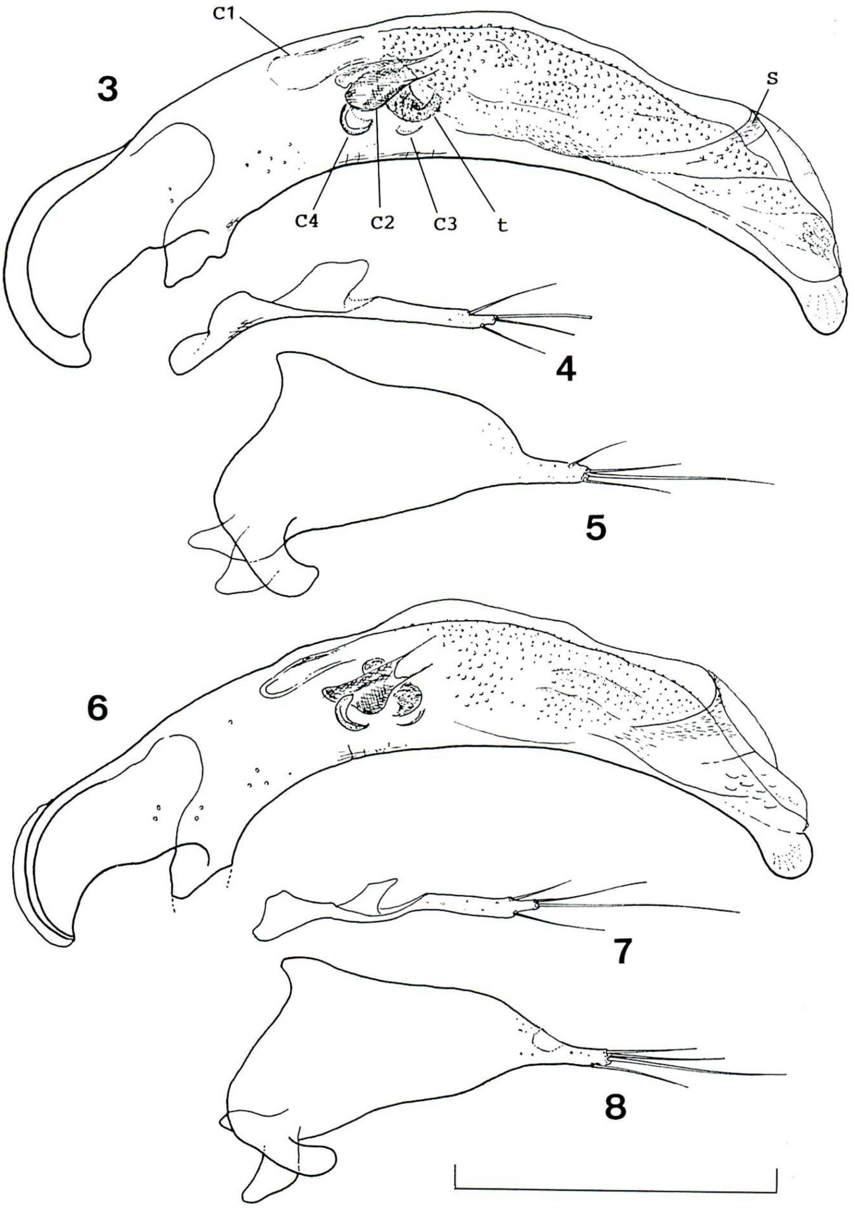
[1] According to LINDROTH's drawing (1963, p. 292, fig. 141 b), the apical part is well rounded. However, my examination proved that this falls in the range of individual variation.



Figs. 3–8. Male genital organ, left lateral view; 3, 6, aedeagus (C1–C4: copulatory pieces, t: teeth-patch, s: mat of spinules or hairs); 4, 7, right style; 5, 8, left style. (Scale: 0.4 mm). —— 3–5, *Bembidion* (*Plataphus*) *gebleri gebleri* GEBLER from Leninogorsk; 6–8, *B.* (*P.*) *g. persuasum* NETOLITZKY from Mt. Changbai.

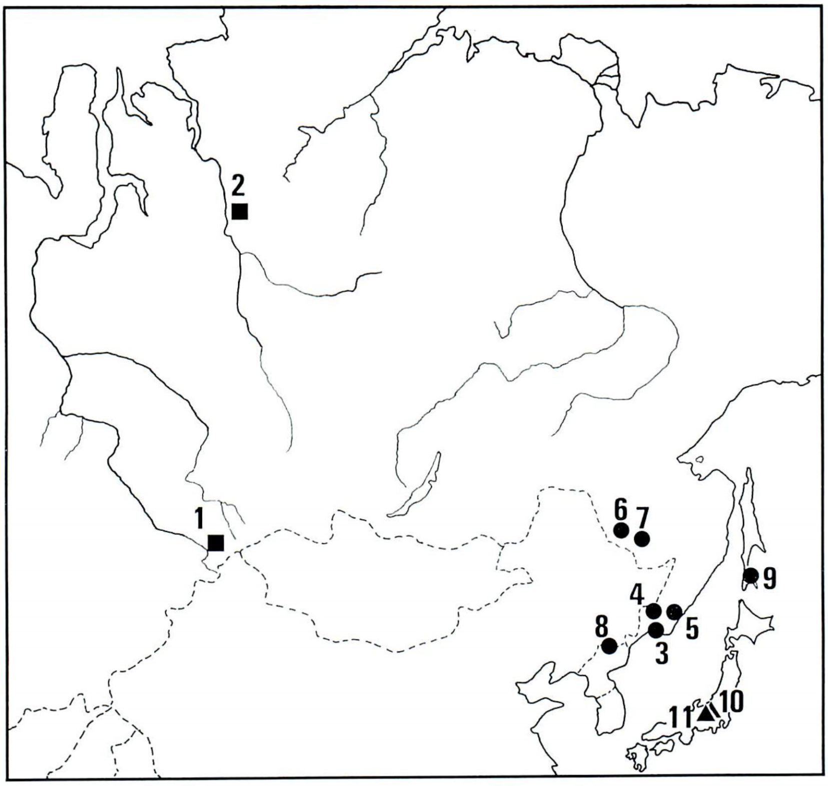


Fig. 9. Map showing the distribution of *Bembidion* (*Plataphus*) *gebleri* in the Far East. ■ – *B.* (*P.*) *g. gebleri* GEBLER; ● – *B.* (*P.*) *g. persuasum* NETOLITZKY; ▲ – *B.* (*P.*) *g. edai* FASSATI. —— 1, Riddersk (=Leninogorsk); 2, Kantaika; 3, Vladivostok; 4, Nikolsk Usurijsk (=Ussurijsk); 5, Setschan (=Partizansk); 6, Chitaizki-Sterena; 7, Chingau (=Khingan); 8, Mt. Changbai, Jirin; 9, Mt. Tshekhov, S. Sakhalin; 10, Kamikôchi; 11, Mt. Norikura-dake.

ly of isodiametric meshes, especially on the disc.

Elytra oblong-ovate, rather convex, widest at a level a little behind middle; EW/PW 1.71 in ♂, 1.66 in ♀, EL/EW 1.31 in ♂, 1.40 in ♀; shoulders rounded; sides gently arcuate and hardly emarginate before apices; apex of each elytron as in the nominotypical form; apical striole shallower than in the nominotypical form and joining stria 5, or the apical anastomosis of striae 5 and 6; striae almost entire, finer and shallower than in the nominotypical form; scutellar striole long and shallow; intervals flat; two dorsal pores on stria 3, situated at about 1/4 and 3/5 from base respectively; microsculpture not sharply impressed, though consisting of irregular lines which are almost transverse.

Aedeagus elongate and moderately arcuate with the apical part well rounded in lateral view; ostium flag vague; mat of spinules or hairs at the proximal end of apical orifice denser and wider than in the nominotypical form.[2]

Type depository. Naturhistorisches Museum Wien.

Localities. Wladiwostok (type locality!), Nikolsk Usurijsk, Chitaizki-Sterena, Setschan, and Chingau.

Specimens examined. 1 ♀ (holotype of *B. persuasum* NETOLITZKY), "16.V.1920"/ "Wladiwostok. Sib. or Frieb."/"coll Netolitzky"/"*B.* (*Plataphus*) *persuasum* Net. Type! Netolitzky"/"TYPUS"/"Coll Netolitzky"; 1 ♂, 1 ♀, Mt. Changbai, Jirin, northeastern China, 24–VI–1987, LI Jingke leg.

Range. Eastern part of Siberia, South Sakhalin (cf. KRYZHANOVSKIJ & MOLODOVA, 1973), and northeastern part of China.

Notes. As was already pointed out by NETOLITZKY (1942, p. 106), this subspecies is distinguished from the nominotypical one by the following points: 1) finer elytral striae; and 2) linear microsculpture on elytra in both ♂ and ♀. Besides, I found additional differences in my material as follows:— 3) body smaller on an average; 4) blackish coloration with bluish lustre; 5) apical striole shallower and sometimes joining the apical anastomosis of striae 5 and 6; 6) viewed laterally, apical part of aedeagus well rounded; and 7) mat of minute spinules or hairs in inner sac denser and wider. In this paper, I regarded it as one of the geographical races of *B. gebleri*, but even now, it is difficult to decide the true systematic position of this form and also of "*B. persuasum jenseni* NETOLITZKY" (1942, p. 106). It is to be hoped that more material of continental forms will be found in wide blank areas (cf. Fig. 9) by future investigations.

Bembidion* (*Plataphus*) *gebleri edai FASSATI, 1954

[Japanese name: Aomarugata-mizugiwa-gomimushi]

(Figs. 10–15)

Peryphus (*Plataphus*) *persuasum*: UÉNO, 1954, Shin Konchû, Tokyo, **7**(5), pp. 44, 45.

Bembidion (*Plataphus*) *gebleri persuasum edai* FASSATI, 1954, Acta. Soc. ent. Cech., **50**, p. 83, fig. 7.

Bembidion (*Plataphus*) *persuasum edai*: NAKANE, 1963, Icon. Ins. Japon. Col. nat. ed., **2**, p. 28, pl. 14, fig. 23; 1978, Nature & Insects, Tokyo, **13**(8), p. 6. —— JEDLIČKA, 1965, Ent. Abh. Mus. Tierk. Dresden, **32**, p. 113.

Bembidion (*Plataphus*) *nakanei* JEDLIČKA, 1965, Ent. Abh. Mus. Tierk. Dresden, **32**, p. 113. —— NAKANE, 1978, Nature & Insects, Tokyo, **13**(8), p. 6. [Syn. nov.].

Bembidion (*Plataphus*) *gebleri*: MORITA, 1985, Coleopt. Japan Col., Osaka, **2**, p. 99, pl. 19, fig. 3.

Length: 3.95–5.15 mm (from apical margin of clypeus to apices of elytra).

Colour as in *B.* (*P.*) *g. persuasum* NETOLITZKY but the bluish lustre is always stronger on the dorsal surface.

Head convex; frontal furrows deep, rather wide and almost parallel; relative lengths

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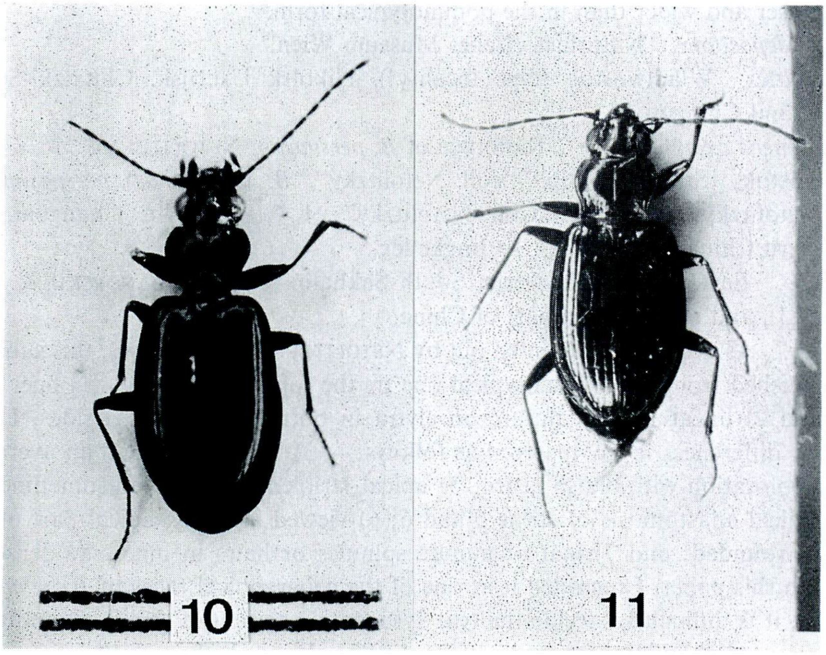
[2] The material available for this study is only a single Chinese specimen. For this reason, I was unable to extract the inner sac and investigate other components, but they appear identical with those of the nominotypical form.



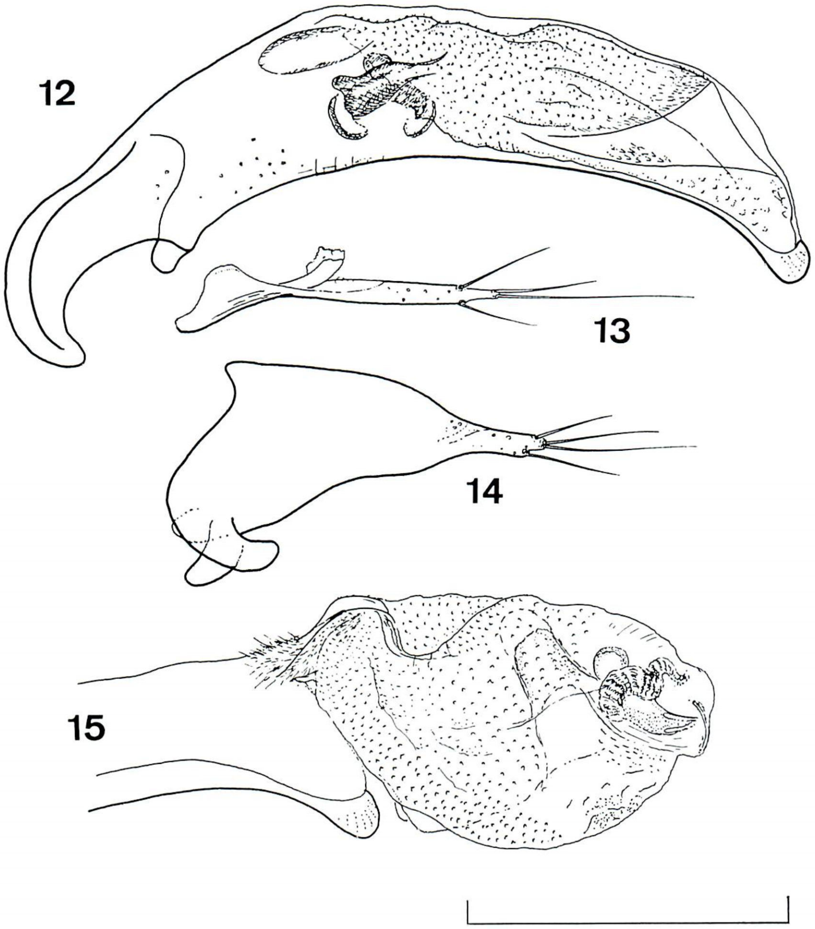
Figs. 10–11. *Bembidion* (*Plataphus*) *gebleri edai* FASSATI. —— 10, "*B.* (*P.*) *g. persuasum edai* FASSATI" (cotype); 11, "*B.* (*P.*) *nakanei* JEDLIČKA" (cotype).

of antennal segments as follows:— I: II: III: IV: V: VI: XI=1: 0.65: 0.98: 1.04: 1.03: 1.08: 1.18; microsculpture consisting of isodiametric meshes in both ♂ and ♀.

Pronotum transverse; PW/HW 1.14–1.20 (M 1.17) in 6 ♂♂, 1.15–1.21 (M 1.19) in 5 ♀♀, PW/PL 1.34–1.45 (M 1.39) in 6 ♂♂, 1.39–1.50 (M 1.44) in 5 ♀♀, PW/PA 1.31–1.41 (M 1.36) in 6 ♂♂, 1.29–1.35 (M 1.31) in 5 ♀♀, PW/PB 1.16–1.26 (M 1.22) in 6 ♂♂, 1.15–1.20 (M 1.17) in 5 ♀♀; apical margin slightly emarginate, a little narrower than base; PA/PB 0.87–0.94 (M 0.89) in 6 ♂♂, 0.87–0.91 (M 0.89) in 5 ♀♀; a small rounded fovea rarely present on each side before middle; basal fovea with sparse wrinkles; hind angles usually acute or rarely rectangular; microsculpture consisting of wide meshes but partially of isodiametric ones.

Elytra oblong-ovate, widest at about middle; EW/PW 1.69–1.76 (M 1.71) in 6 ♂♂, 1.67–1.78 (M 1.73) in 5 ♀♀, EL/EW 1.39–1.48 (M 1.42) in 6 ♂♂, 1.36–1.46 (M 1.43) in 5 ♀♀; apical striole deeper than stria, moderately curved, and usually joining the apical anastomosis of striae 5 and 6, or rarely joining stria 5 (when the stria 6 is free at the posterior end); two dorsal pores situated at 8/25–7/17 and 7/10–3/4 from base respectively; microsculpture consisting of irregular lines which are almost transverse.

Aedeagus more elongate; apical part moderately rounded in lateral view (sometimes strongly rounded than in the specimen illustrated in Fig. 12); inner structure almost the same as in *B. g. persuasum*; minute spinules or hairs more densely covering



Figs. 12–15. Male genital organ of *Bembidion* (*Plataphus*) *gebleri edai* FASSATI from Kamikôchi in left lateral view; 12, aedeagus; 13, right style; 14, left style; 15, aedeagus, showing everted inner sac. (Scale: 0.4 mm.)

the proximal end of apical orifice; styles as in *B. g. persuasum*, each provided with four setae.

Type depository. National Museum, Prague.

Localities. Kamikôchi (type locality!), 1,500 m in altitude, Nagano Prefecture, and Mt. Norikura-dake, on the borders between Nagano and Gifu Prefectures, central Honshu, Japan (cf. Figs. 9, 22).

Specimens examined. 1 ♂, "*B. gebleri* ssp. *persuasum* n. *Edai* m. PARATYPUS—Det. M. Fassati 1956"/"Paratypus"/"JAPAN-ALPS., 1500 m, Kamikochi, 27.VII. 1952, leg. S. Eda, coll M. Fassati" (NMW); 1 ♂, "1400, M. H. MT. NORIKURA. JAPAN-ALPS."/"Cotype"/"Mus. Nat. Pragae 23962 Inv."/"*nakanei* sp. n det. Ing

Jedlička" (NMP); 1 ♂, (no locality data), "Cotype"/"Mus. Nat. Pragae 23963 Inv."/"*nakanei* sp. n det. Ing Jedlička" (NMP); 1 ♀, Kamikôchi, 29–VII–1952, S. EDA leg.; 1 ♂, Kamikôchi, 7–VII–1973, S. MORITA leg.; 5 ♂♂, 2 ♀♀, Kamikôchi, 21–VI–1985, S. MORITA leg.; 1 ♂, 3 ♀♀, Kamikôchi, 16–VII–1988, S. MORITA leg.

Notes. Evidently, this Japanese form is closely related to *B.* (*P.*) *g. persuasum.* It is, however, distinguished from the latter by the following points: 1) more strongly bluish lustre on dorsal side; 2) hind angles usually acute; 3) apical striole usually joining the apical anastomosis of striae 5 and 6; and 4) aedeagus a little more robust.

In his key to the East Asian species of *Bembidion* (1965), JEDLIČKA described *B. nakanei* based on four examples from Kamikôchi, Central Japan. Of these, the two specimens recorded above were re-examined by myself. According to Dr. BÍLÝ (pers. comm.), one of the remaining two type specimens bears a label with the name of its type locality, Kamikôchi, and the other is labelled as Mt. Norikura. These examples, however, must belong to the type series. I am unable to understand why he did not add the second locality, Mt. Norikura(-dake), to his original description.

Both FASSATI and JEDLIČKA extracted male genital organs from their specimens. Unfortunately, they became flattened and deformed, and looked like that of the following new species. In his description, however, FASSATI gave a good drawing of his specimen.

Bembidion* (*Plataphus*) *shilenkovi MORITA, sp. nov.

[Japanese name: Nise-aomarugata-mizugiwa-gomimushi]

(Figs. 16–21)

Length: 4.04–4.95 mm (from apical margin of clypeus to apices of elytra).

Body convex. Black, shiny with bluish lustre; elytra with iridescent lustre; labrum, antennae, palpi mandibles and most part of legs blackish brown; basal parts of femora and metatrochanters reddish brown.

Head wide and rather convex above; frontal furrows wide and shallow, usually a little divergent posteriad or rarely parallel, and reaching a little behind the mid-eye level; eyes prominent; anterior supraorbital pore situated at or a little behind the mid-eye level, posterior one just before the post-eye level; mandibles strongly hooked at apices; antennae filiform and long; relative lengths of antennal segments as follows:— I: II: III: IV: V: VI: XI=1: 0.70: 1.02: 1.04: 1.08: 1.08: 1.30; microsculpture distinct, consisting of almost isodiametric meshes.

Pronotum transverse and widest at about 4/7 from base; PW/HW 1.21–1.32 (M 1.27) in 30 ♂♂, 1.20–1.35 (M 1.27) in 30 ♀♀, PW/PL 1.38–1.55 (M 1.45) in 30 ♂♂, 1.40–1.55 (M 1.49) in 30 ♀♀, PW/PA 1.35–1.46 (M 1.40) in 30 ♂♂, 1.30–1.46 (M 1.39) in 30 ♀♀, PW/PB 1.14–1.26 (M 1.18) in 30 ♂♂, 1.14–1.23 (M 1.18) in 30 ♀♀; apical margin slightly emarginate, a little narrower than base; PA/PB 0.78–0.90 (M 0.84) in 30 ♂♂, 0.82–0.90 (M 0.85) in 30 ♀♀; sides moderately arcuate in front and very slightly sinuate before hind angles; reflexed lateral borders wide though becoming

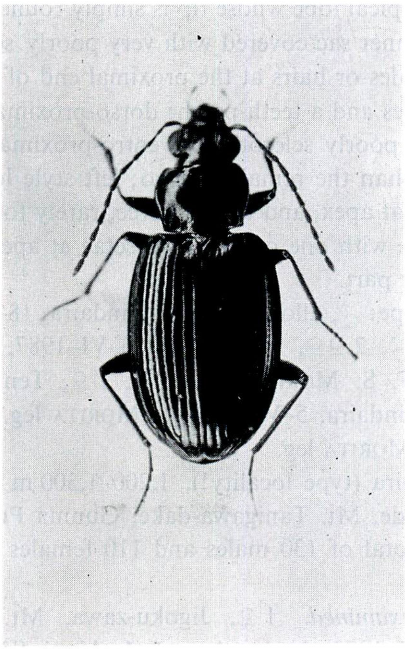


Fig. 16. *Bembidion* (*Plataphus*) *shilenkovi* MORITA, sp. nov., from Tenjindaira on Mt. Tanigawa-dake, Gunma Prefecture.

narrower towards apex; base nearly straight at the middle, slightly oblique on each side; apical angles moderately produced and rounded at the tips, hind ones nearly rectangular, with carinae close to lateral borders; a small rounded fovea rarely present on each side before middle; median line impressed, though reaching neither apex nor base; anterior transverse impression vague; basal foveae large and deep, with vague wrinkles; anterior marginal setae situated a little before the widest part, posterior ones situated just before hind angles; microsculpture consisting of transverse meshes.

Elytra oval, convex and widest at about middle; EW/PW 1.55–1.70 (M 1.60) in 30 ♂♂, 1.56–1.71 (M 1.63) in 30 ♀♀, EL/EW 1.39–1.49 (M 1.43) in 30 ♂♂, 1.38–1.49 (M 1.43) in 30 ♀♀; sides rather strongly arcuate and slightly emarginate before apices; apex of each elytron rather widely rounded, forming a small re-entrant angle at suture; striae entire, becoming a little shallower towards apices, and clearly punctate, especially in basal halves; scutellar striole long; intervals slightly convex; apical striole usually deep, moderately curved and joining stria 5 (striae 6 and 7 free at the posterior ends), rarely joining the apical anastomosis of striae 5 and 6 (in this case, the stria 7 is free at the posterior end); two dorsal pores on stria 3, situted at 3/8–3/7 and 2/3 –3/4 from base respectively; microsculpture not sharply impressed, though consisting of irregular lines which are almost transverse.

Male genital organ similar in basic structure to that of *B.* (*P.*) *g. edai.* Aedeagus elongate, less robust, and much narrowed at the apical third on the dorsal side in profile, with rather long apical lobe whose tip is simply rounded or sometimes reduced as shown in Fig. 20.[3] Inner sac covered with very poorly sclerotized scales, but devoid of very minute spinules or hairs at the proximal end of apical orifice, and armed with four copulatory pieces and a teeth-patch; dorso-proximal copulatory piece somewhat spatulate and very poorly sclerotized; ventro-proximal copulatory piece much more poorly sclerotized than the remaining two; left style longer than the right; left style with two long setae at apex, and two or three, rarely four, short setae at apex or subapical part; right style with one or two long setae at apex and two or three short setae at apex or subapical part.

Type series. Holotype: ♂, allotype: ♀, Tenjindaira, 18–VI–1988, S. MORITA leg. (NSMT). Paratypes: 1 ♂, 2 ♀♀, Tenjindaira, 6–VI–1987, S. MORITA leg.; 8 ♂♂, Machigasawa, 6–VI–1987, S. MORITA leg.; 1 ♂, 1 ♀, Tenjindaira, 12–IX–1987, S. MORITA leg.; 2 ♀♀, Tenjindaira, 5–VI–1988, S. MORITA leg.; 119 ♂♂, 105 ♀♀, Tenjindaira, 18–VI–1988, S. MORITA leg.

Localities. Tenjindaira (type locality!), 1,200–1,300 m in altitude, and Machigasawa, 1,100 m in altitude, Mt. Tanigawa-dake, Gunma Prefecture, Central Japan.

I have examined a total of 130 males and 110 females from the localities given above.

Further specimens examined. 1 ♀, Jigoku-zawa, Mt. Hakkôda-san, 1,200 m alt., Aomori Pref., 9–VIII–1988, A. ABE leg.; 1 ♂, Ainai, Sôma-mura, Aomori Pref., 13–VIII–1987, A. ABE leg.; 1 ♀, Riv. Anmon-gawa, Ajigasawa-chô, Aomori Pref., 7–VIII–1987, S. YAMAUCHI leg.; 2 ♂♂, 1 ♀, Noro-zawa, Ajigasawa-chô, Aomori Pref., 25–VII–1988, A. ABE leg.; 2 ♂♂, 1 ♀, Mt. Katta-dake, Zaô, Miyagi Pref., 24–VII–1976, S. MORITA leg.; 1 ♀, Marunuma, Katashina-mura, Gunma Pref., 29–VIII–1972, S. MORITA leg.; 1 ♂, 1 ♀, Shibunoyu∼Nakayama-tôgé, Chino-shi, Nagano Pref., 6∼8–VII–1979, S. MORITA leg.; 2 ♂♂, 1 ♀, Mt. Amakazari-yama, Nagano Pref., 3–IX–1988, S. MORITA leg.; 3 ♂♂, 4 ♀♀, Renge-onsen, Niigata Pref., 20–VIII–1986, M. SATÔ leg.; 1 ♂, 1 ♀, Abe-tôgé, Shizuoka-shi, Shizuoka Pref., 24–VI–1978, S. MORITA leg.; 1 ♀, Mt. Chausu-dake, Shizuoka-shi, Shizuoka Pref., 21–VIII–1978, S. MORITA leg.

Notes. Because of close similarity in the basic structure of male genital organ, this new species is doubtless closely related to *B.* (*P.*) *g. edai.* It is, however, distinguished from the latter by the following points: 1) more convex body; 2) darker coloration on the dorsal surface with stronger iridescent lustre; 3) deeper basal foveae on pronotum; 4) oval elytra; 5) convex intervals; 6) deeper elytral striae with punctuation; 7) aedeagus with strongly narrowed part at the apical third of dorsal surface; 8) aedeagal apical lobe simply rounded; 9) inner sac without spinules or hairs at the proximal end of apical orifice; and 10) ventro-proximal copulatory piece very poorly sclerotized.

Like *B.* (*P.*) *g. edai*, this beetle is found at middle to high elevations under stones

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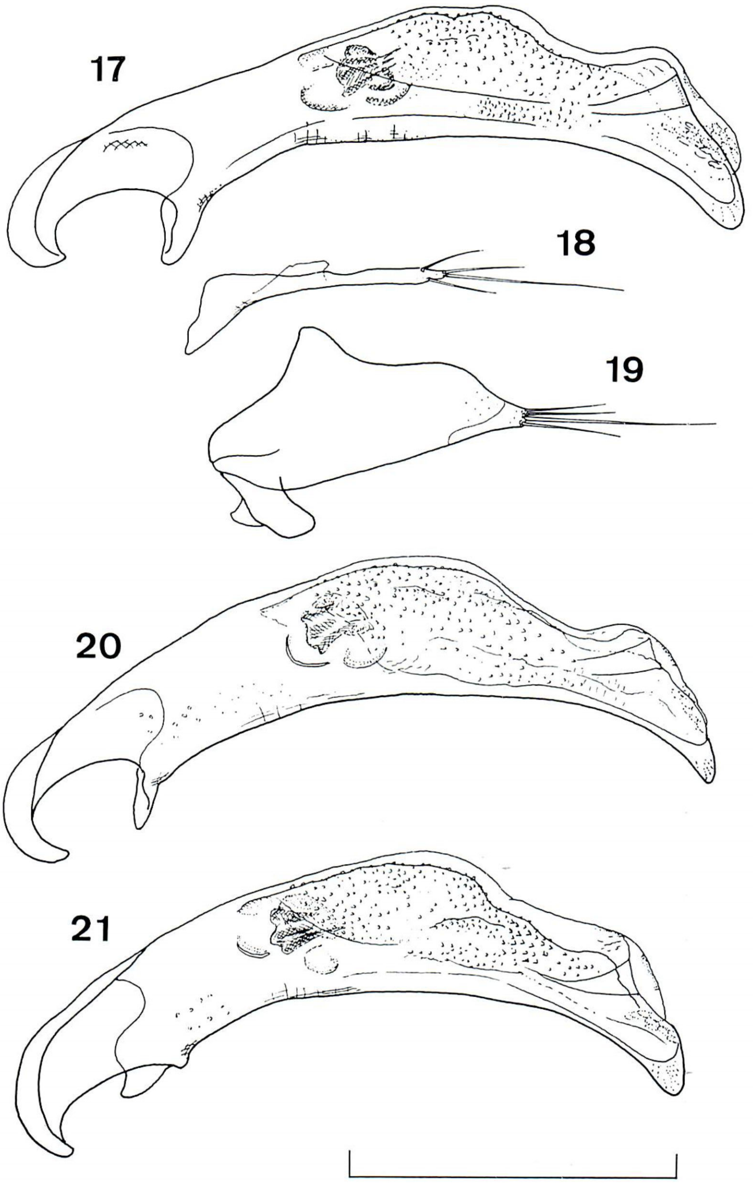
[3] I am aware of the fact that the aedeagal apical part shows considerable individual variation in the details of outline, but the structure of inner armature is very constant within the same population.



Figs. 17–21. Male genital organ of *Bembidion* (*Plataphus*) *shilenkovi* MORITA, sp. nov., in left lateral view; 17, aedeagus of a topotypical specimen; 18, right style; 19, left style; 20, aedeagus of a topotypical specimen, showing the variation; 21, aedeagus of the specimen from the Abe-tôgé, Shizuoka Prefecture. (Scale: 0.4 mm.)

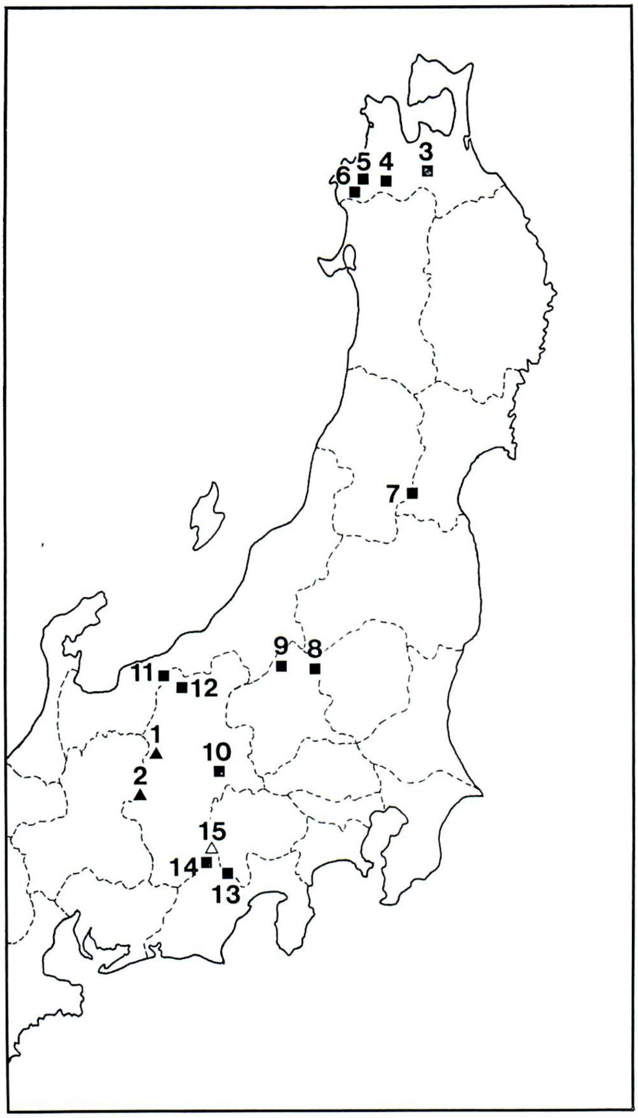


Fig. 22. Map showing the distribution in Japan of *Bembidion* (*Plataphus*) *gebleri edai* FASSATI and *B.* (*P.*) *shilenkovi* MORITA, sp. nov. ▲ – *B.* (*P.*) *g. edai* FASSATI; ■ – *B.* (*P.*) *shilenkovi* MORITA, sp. nov.; △ – *B.* (*P.*) sp. —— 1, Kamikôchi; 2, Mt. Norikura-dake; 3, Jigoku-zawa; 4, Ainai; 5, Riv. Anmon-gawa; 6, Noro-zawa; 7, Mt. Katta-dake; 8, Marunuma; 9, Tenjindaira and Machigasawa; 10, Shibunoyu～Nakayama-tôgé; 11, Renge-onsen; 12, Mt. Amakazari-yama; 13, Abe-tôgé; 14, Mt. Chausu-dake; 15, Mt. Senmai-dake.

at the edges of cold streams, small rivers and also snow patches. On Mt. Tanigawa-dake, the type locality of this species, several individuals of other bembidiines, *B. nuncaestimatum* NETOLITZKY, *B. misellum* HAROLD and *B.* sp. (MORITA, unpublished), were obtained at the same time. Of these, the first species seems to have been confused with this new bembidiine because of similar coloration and body form, but the relationship between them does not appear very close.

Though widespread in the mountainous area of Aomori Prefecture, northern Honshu, this new species has not been found so far in Hokkaido, the northernmost main island of Japan. This is strange, since even flightless carabid beetles (*e.g.*, *Pterostichus mirificus* BATES, *Oroblemus parvicollis* S. UÉNO, and so on) are sometimes distributed onto the Oshima Peninsula of Hokkaido (cf. UÉNO, 1987, pp. 123–132). It is possible that this bembidiine will also be found in Hokkaido, especially on that peninsula.

This new species is dedicated to Dr. V. G. SHILENKOV whose kind help enabled me to complete the present paper.

Postscript

A single male bembidiine belonging to the group under consideration was collected by myself on Mt. Senmai-dake, Shizuoka-shi, Central Japan (No. 15 in Fig. 22). Though this beetle is seemingly referable to *B.* (*P.*) *g. edai*, its aedeagus is similar to that of *B.* (*P.*) *shilenkovi*. Besides, it is a very small individual, 3.44 mm in length. The standard ratios of the body parts are as follows: PW/HW 1.19, PW/PL 1.48, PW/PA 1.33, PW/PB 1.25, PA/PB 0.94, EW/PW 1.60, EL/EW 1.43.

It is possible that this beetle may belong to a new geographical race. However, determination of its true systematic position should be postponed until many more individuals can be obtained on the same mountain.

The collecting data of the specimen in question are as given below: 1 ♂, Mt. Senmai-dake, Shizuoka-shi, Shizuoka Pref., Central Japan, 22–VII–1981, S. MORITA leg.

要　　約

森田誠司: *Bembidion* (*Plataphus*) *gebleri* GEBLER と近縁の 1 新種. —— アルタイから記載された *Bembidion* (*Plataphus*) *gebleri* GEBLER を再記載するとともに，ウラジオストックから記載された“*B.* (*P.*) *persuasum* NETOLITZKY”をおもに交尾器の研究からその亜種とみなし，中国の長白山からも記録した．また日本産の“*edai*”も同一種の亜種とみなし，同時に *B.* (*P.*) *nakanei* JEDLIČKA をその同物異名とみなした．また陰茎の内部構造から判断して，近縁と思われる1新種，ニセアオマルガタミズギワゴミムシ *B.* (*P.*) *shilenkovi* を谷川岳より記載した．この新種は，北は青森県八甲田山から，西は新潟県蓮華温泉まで分布している．本種は，外部形態のみならず，陰茎の先端から 1/3 の部分が背面でいちじるしくくびれること，先端部が細く単純に丸まること，先端開口部の基部に微細な棘または毛の束を欠如することなどにより，明確に識別される．なお摘出された交尾器は，乾燥して縮小したり変形すると，とくに *B.* (*P.*) *g. edai* の場合に *B.* (*P.*) *shilenkovi* との識別が困難になるので，注意が必要である．最後に南アルプスの千枚岳で採集された個体に関して，かんたんにふれておいた．外部形態では *B.* (*P.*) *g. edai* によく似ているが，交尾器は *B.* (*P.*) *shilenkovi* のもの

に近い．ここでは分類学上の問題点を示すにとどめた．

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Two New Relatives of *Pterostichus cristatoides* (Coleoptera, Carabidae) from Central Japan

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Abstract Two new pterostichine carabid beetles, *Pterostichus* (*Epinialoe*) *hakusanus* sp. nov. and *P.* (*E.*) *dandonis* sp. nov., are described from central Honshu, Japan. Both the new species are closely related to *P.* (*E.*) *cristatoides* STRANEO.

An apterous pterostichine carabid beetle, *Pterostichus cristatoides* STRANEO (1955, pp. 87, 90–93), has been known from the Hida Mountain Range in central Honshu, Japan. TANAKA (1961, p. 48) redescribed it, and noticed that a new form of the species occurs on Mt. Kiso-komagatake, the highest peak of the Kiso Mountain Range in central Honshu, though not naming it.

On the other hand, two unnamed relatives of the same species have been known in central Honshu. One of them is found on the Hakusan Mountains on the borders of Fukui and Gifu Prefectures. It closely resembles *P. cristatoides* in appearance, but is clearly discriminated from the latter by different configuration of the terminal sternite and genitalia in the male. The other species occurs on Mt. Dando-san and its neighbouring mountains, lying at the southernmost part of the Kiso Range in Aichi Prefecture. In external morphology, this interesting beetle is rather similar to *P. spiculifer* BATES, widely distributed in the eastern half of Honshu, than to *P. cristatoides*, but is no doubt a close relative of the latter because of similarity in the characteristic shape of aedeagus. This is also new to science like other species.

In this paper, I will describe the former under the name of *Pterostichus hakusanus* sp. nov., and the latter under that of *P. dandonis* sp. nov. Both the new species belong to the subgenus *Epinialoe* NAKANE (1979, p. 56) in view of the conformation of male genitalia. The abbreviations used herein are the same as those explained in other papers of mine.

Before going further, I wish to express my deep gratitude to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for his advice and for reading the manuscript of this paper. Thanks are also due to Professor Masataka SATÔ of Nagoya Womens' University, Messrs. Hiroshi IWASAKI and Masahiro SAITO for their kind help in materials, and to Messrs. Shirô ANDÔ, Michiaki HASEGAWA and Ten NAKASHIMA of the Gifu Prefectural Museum, Seki, for their kind support in field works.

Pterostichus (Epinialoe) hakusanus KASAHARA, sp. nov.

[Japanese name: Hakusan-nagagomimushi]

(Figs. 1–2, 4)

Description. Length (measured from apex of labrum to apices of elytra) 12.5–13.8 mm. Width 4.8–5.3 mm. Black, shiny; labrum, mandibles and femora dark reddish brown; palpi, antennae, tibiae and tarsi reddish brown.

Head moderately convex, shiny; eyes convex; temporae oblique, gently, sometimes distinctly tumid; genae smooth; labrum and mandibles normal; clypeus gently emarginate at apex; clypeal suture very fine; frontal furrows rather deep, divergent in posterior halves, and extending to the level of anterior supraorbital setae; lateral grooves deep, extending to a little behind the post-eye level; surface minutely and sparsely punctate, microsculpture visible, formed by nearly isodiametric meshes; palpi normal; antennae extending to behind shoulders of elytra; relative lengths of scape and segments 2–6 as follows:— 1: 0.53: 0.88: 0.94: 0.94: 0.88; segment 2 unisetose ventrally at apex.

Pronotum cordate, rather flat, shiny, widest at apical fourth, ca. 1.4 times as wide as head (PW/HW 1.36–1.44, mean 1.41), as wide as long in almost the same proportion (PW/PL 1.33–1.41, mean 1.40), ca. 1.35 times as wide as base (PW/PBW 1.30–1.41, mean 1.35); lateral margins evenly well arcuate in apical halves, then strongly convergent posteriad and fully sinuate before base, basal parts almost parallel, and with small irregular notches; lateral reflexed borders narrow, though becoming wider towards apices; lateral grooves almost smooth, or obsoletely punctate; anterior marginal setae inserted a little before the widest part; apical margin emarginate, not bordered, apical angles produced, rounded at the tips; basal margin almost as wide as, or a little wider than the apical, gently emarginate at median part, rather oblique and bordered on each side, basal angles nearly rectangular, pointed at the tips; basal foveae distinct, shallowly and linearly impressed at the bottoms, divergent anteriad, punctate, and often with transverse rugosity; outer sides of furrows flat, punctate; surface with irregular transverse wrinkles; microsculpture slightly visible, formed by fine transverse meshes.

Apterous. Elytra oblong-ovate, rather flat, shiny, weakly iridescent, widest at about middle, ca. 1.3 times as wide as pronotum (EW/PW 1.22–1.31, mean 1.27), ca. 2.6 times as long as pronotum (EL/PL 2.48–2.64, mean 2.57), about a half as long again as wide (EL/EW 1.42–1.48, mean 1.45); basal border gently curved, obliquely extending to shoulder, and joining lateral border at an obtuse but often mal-defined angle; shoulders narrowly rounded; lateral margins gently arcuate, preapical emarginations shallow; sutural angles obtuse, though rounded at the tips; inner plica invisible; scutellar striole short, lying on interval 1, and connected with basal border; striae moderately impressed, smooth; intervals gently convex; interval 3 with three (rarely four) dorsal pores, anterior one at basal fourth and adjoining stria 3, the remainings adjoining stria 2 at about middle and apical fourth, respectively; marginal

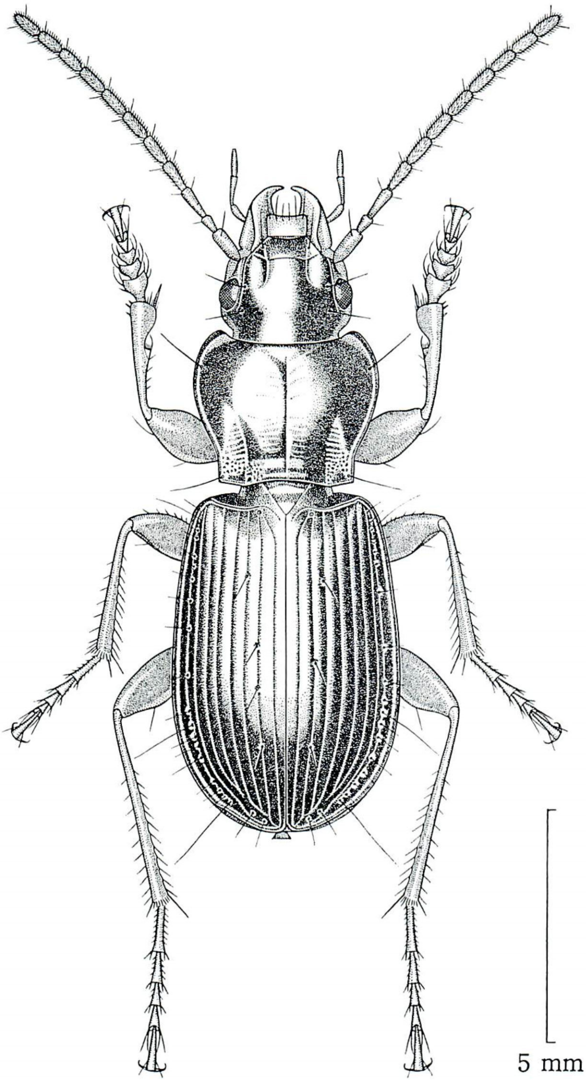
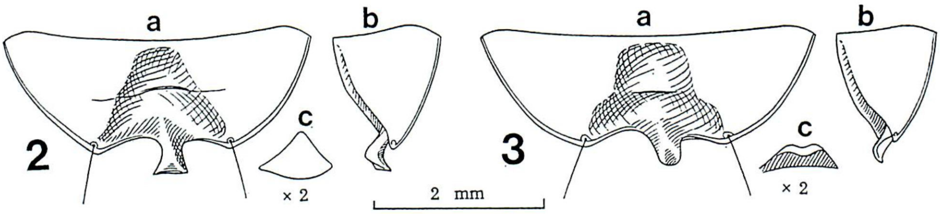


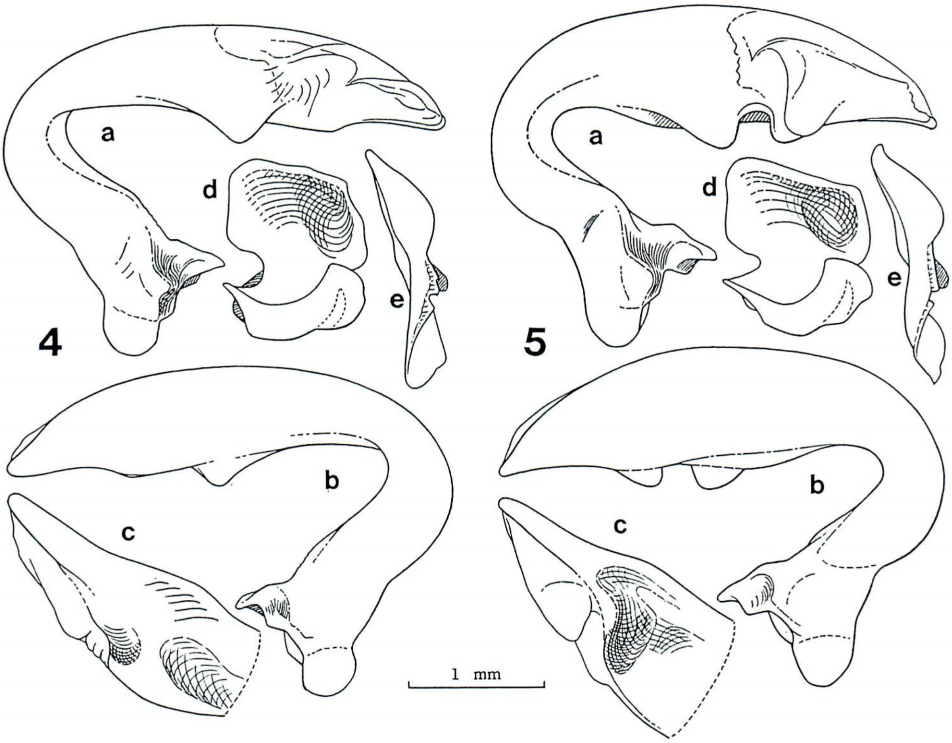
Fig. 1. *Pterostichus* (*Epinialoe*) *hakusanus* KASAHARA, sp. nov., ♂, from Ohshirakawa, Gifu Prefecture.

series of pores 16–19 in number, widely spaced at middle; microsculpture visible, formed by fine transverse meshes.

Basal three segments of meso- and metatarsi externally sulcate. Ventral side shiny, partially punctate; prosternal process furrowed at middle, not bordered; in the male, terminal sternite deeply excavated in apical half, its apical margin deeply emarginate and with a projection, which is distinctly dilated apicad and truncate at the



Figs. 2–3. Terminal sternites in the males of *Pterostichus* (*Epinialoe*) spp. —— 2, *P*. (*E*.) *hakusanus* KASAHARA, sp. nov., from Ohshirakawa, Gifu Prefecture; 3, *P*. (*E*.) *cristatoides* STRANEO from Shimajima-dani, Nagano Prefecture; a, ventral view; b, left lateral view; c, apex of projection in rear view.



Figs. 4–5. Male genitalia of *Pterostichus* (*Epinialoe*) spp. —— 4, *P*. (*E*.) *hakusanus* KASAHARA, sp. nov., from Ohshirakawa, Gifu Prefecture; 5, *P*. (*E*.) *cristatoides* STRANEO from Shimajima-dani, Nagano Prefecture; a–c, aedeagus; a, left lateral view; b, right lateral view; c, apical half in ventral view; d, left paramere; e, right paramere.

apex; in caudal view, truncated face of anal projection triangular.

Aedeagus strongly bent at basal two-fifths, with a distinct tumour at the left ventral side of apical third, and with rounded apex; left paramere wide, square; right one narrow, straight, tapering towards apex.

Type series. Holotype: ♂, Shiramizu, Ohshirakawa (1,350 m alt.), Shirakawa-mura, Gifu Pref., 1–VII–1988, S. KASAHARA leg.; allotype: ♀, same data as for the holotype. Paratypes: 2 ♂♂, 3 ♀♀, same data as for the holotype; 13 ♂♂, 4 ♀♀, same locality, 2–VII–1988, S. KASAHARA leg.; 1 ♂, Ikegahara, Ohno-shi, Fukui Pref., 13–VII–1986, S. KASAHARA & M. SAITO leg.

The holo- and allotypes are deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo. The paratypes are separately preserved in the collections of the Gifu Prefectural Museum, Seki, and of mine.

Notes. TANAKA (1985, p. 118) recorded the Hakusan Mountains as a locality of *P. cristatoides*. I obtained a male example, which is referable to *P. cristatoides*, in a branch valley of the Ohshirakawa, only 1.5 km northeast of the habitat of the present new species. It is, however, somewhat different from topotypical individuals in the shape of the right paramere, which is evidently slenderer and curved inwards at the apex. It seems to be an unnamed local race of *P. cristatoides*, occurring sympatrically with the present new species on the Hakusan Mountains.

Pterostichus* (*Epinialoe*) *dandonis KASAHARA, sp. nov.

[Japanese name: Dando-nagagomimushi]

(Figs. 6–8)

Description. Length (measured as in the preceding species) 13.2–13.8 mm. Width 4.7–5.1 mm. General appearance narrower than in the preceding species. Black, shiny; labrum and mandibles dark reddish brown; palpi, antennae and legs reddish brown to dark reddish brown; ventral side almost dark reddish brown.

Head moderately convex; eyes more convex than those of the preceding species, more or less prominent; temporae gently tumid; genae smooth; frontal furrows distinct, though not so deep, divergent in posterior halves; clypeal suture fine; lateral grooves deep, extending to a little behind the post-eye level; surface impunctate; microsculpture slightly visible, formed by isodiametric meshes; antennae normally long; relative lengths of scape and segments 2–6 as follows:— 1: 0.57: 0.83: 1: 0.93: 0.93; segment 2 ventrally unisetose at apex.

Pronotum cordate, narrower than in the preceding species, gently convex, shiny, widest at apical fourth, ca. 1.4 times as wide as head (PW/HW 1.31–1.43, mean 1.37), as wide as base in almost the same proportion (PW/PBW 1.33–1.49, mean 1.42), ca. 1.3 times as wide as long (PW/PL 1.22–1.38, mean 1.32); lateral margins evenly well arcuate in apical halves, then strongly convergent posteriad and gently sinuate before base, basal part often more or less divergent posteriad and with small irregular notches; lateral grooves almost smooth; anterior marginal setae inserted a little before the widest level; apical margin emarginate, not bordered, apical angles produced, rounded at the tips; basal margin almost as wide as the apical, gently emarginate at the median part, rather oblique and bordered on each side, basal angles distinct, rectangular;

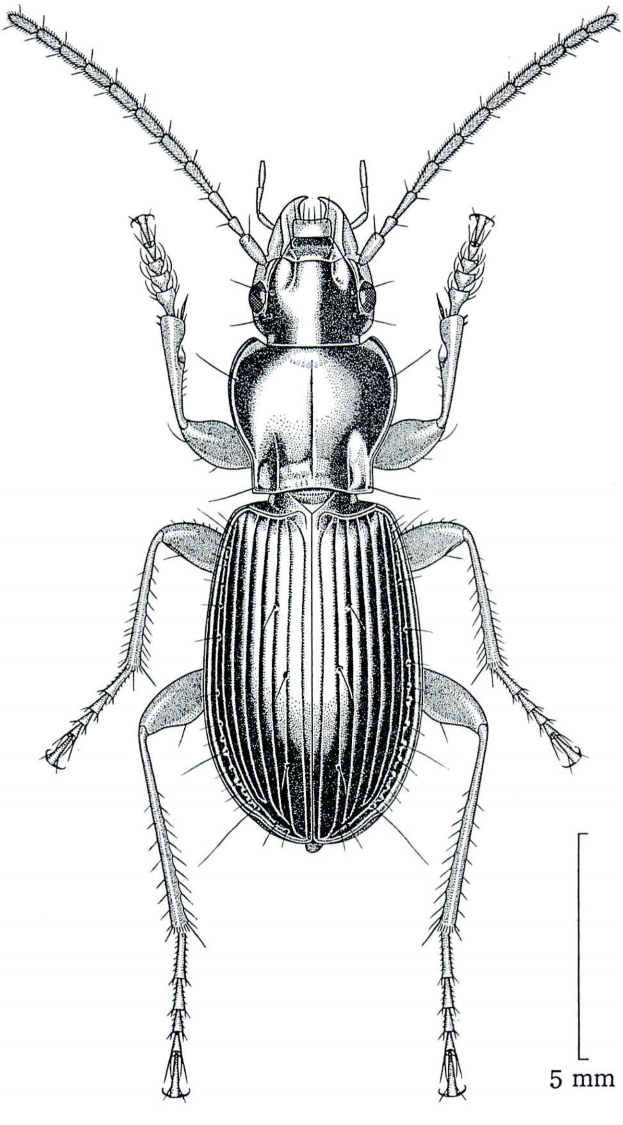


Fig. 6. *Pterostichus* (*Epinialoe*) *dandonis* KASAHARA, sp. nov., ♂, from Mt. Dando-san, Aichi Prefecture.

basal foveae linearly impressed, parallel in basal halves, somewhat divergent in anterior parts, smooth; outer sides of furrows more or less reflexed, smooth; median line strongly impressed; apical crescent and basal transverse depressions obsolete; surface smooth, though often with transverse wrinkles; microsculpture slightly visible, formed by very fine transverse meshes.

Apterous. Elytra oblong-ovate, gently convex, shiny, slightly iridescent, widest

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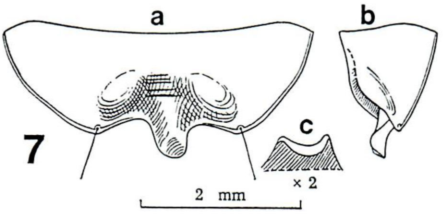

Fig. 7. Terminal sternite in the male of *Pterostichus* (*Epinialoe*) *dandonis* KASAHARA, sp. nov., from Mt. Dando-san, Aichi Prefecture; a, ventral view; b, left lateral view; c, apex of projection in rear view.

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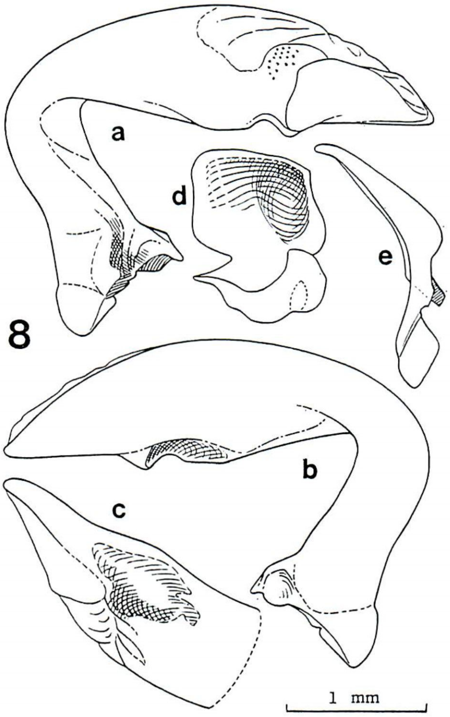

Fig. 8. Male genitalia of *Pterostichus* (*Epinialoe*) *dandonis* KASAHARA, sp. nov., from Mt. Dando-san, Aichi Prefecture; a–c, aedeagus; a, left lateral view; b, right lateral view; c, apical half in ventral view; d, left paramere; e, right paramere.

at about middle, ca. 1.3 times as wide as pronotum (EW/PW 1.25–1.32, mean 1.28), ca. 2.6 times as long as pronotum (EL/PL 2.46–2.73, mean 2.57), about a half as long again as wide (EL/EW 1.48–1.55, mean 1.52); basal border gently curved, obliquely extending to shoulder, and joining lateral border at a very obtuse or mal-defined angle; shoulders rounded; lateral margins gently arcuate, preapical emarginations shallow;

sutural angles obtuse, rounded at the tips; inner plica invisible; scutellar striole very short, lying on interval 1, and connected with basal border; striae clearly impressed, smooth; intervals gently convex; interval 3 with three dorsal pores, anterior one at basal fourth and adjoining stria 3, the remainings adjoining stria 2 at about middle and apical fourth, respectively; marginal series of pores 16–17 in number, widely spaced at middle; microsculpture slightly visible, formed by fine transverse meshes.

Basal three segments of meso- and metatarsi externally sulcate, sometimes also internally. Ventral side almost smooth, though apical half of mesepisterna and lateral side of metasternum punctate; in the male, terminal sternite trapezoidally concave in apical half and gently tumid outside of the concavity, apical margin emarginate and with a somewhat asymmetrical projection, whose apex is rounded.

Aedeagus strongly bent at basal two-fifths, raised and bisinuate at the left ventral side at apical third, deeply and widely concave on the ventral surface at apical third; left paramere wide, square; right one slender, gently arcuate, tapering towards apex.

Type series. Holotype: ♂, Uradani (950 m alt.), Mt. Dando-san, Shitara-chô, Aichi, Pref., 19–VII–1980, S. Kasahara leg.; allotype: ♀, same data as for the holotype. Paratypes: 10 ♂♂, 10 ♀♀, same data as for the holotype; 31 ♂♂, 17 ♀♀, same locality, 20–VII–1980, S. Kasahara leg.; 1 ♂, same locality, 31–V–1981, H. Iwasaki leg.; 2 ♂♂, same locality, 11–X–1981, H. Iwasaki leg.; 1 ♂, same locality, 11–VI–1983, H. Iwasaki leg.

Other specimens examined. 1 ♂, Azo, Shimoyama-mura, Aichi Pref., 12–VI–1982, H. Iwasaki leg.; 1 ♂, Konzoure, Asuke-chô, Aichi Pref., 12–VI–1982, H. Iwasaki leg.; 1 ♂, Mennoki-tôge, Tsugu-mura, Aichi Pref., 29–V–1988, M. Satô leg.

The holo- and allotypes are deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo. The paratypes are separately preserved in the collections of H. Iwasaki and mine.

Notes. The present new species is easily distinguished from the preceding species and its allies by its peculiar facies resembling *P. spiculifer*, but is easily separable from that species by different conformation of genitalia in the male.

要　約

笠原須磨生：シンシュウナガゴミムシ（オサムシ科）に近縁の2新種．—— 本州中部から，シンシュウナガゴミムシ *Pterostichus* (*Epinialoe*) *cristatoides* Straneo に近縁の2新種を記載した．

1）　ハクサンナガゴミムシ *P.* (*E.*) *hakusanus* は，白山山地の福井，岐阜両県内で発見された．本種の外形は，シンシュウナガゴミムシによく似ているが，雄の腹部末端節腹板と交尾器の形態がいちじるしく相違し，とくに末端節後縁の突出片の形態はきわめて特徴的で，よういに他種と識別できる．なお，白山山地には，シンシュウナガゴミムシの地方型も産し，一部では同所的にみられる．

2）　ダンドナガゴミムシ *P.* (*E.*) *dandonis* は，愛知県北部の段戸山とその周辺山地に分布する．本種の外形は，前種より明らかに細形で，むしろ，ハラトゲナガゴミムシ *P.* (*E.*) *spiculifer* Bates に似ているが，陰茎の形態的特徴は，疑いもなくシンシュウナガゴミムシとの類縁関係を示す興味深い種である．

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Elytra, Tokyo, **17** (1): 43, May 15, 1989

晩秋のナガゴミムシ数種

笠原須磨生

Sumao KASAHARA: Some Pterostichine Carabids Collected in the Late Autumn

昨年 (1988)，紅葉の美しい晩秋の栃木県藤原町で，地下浅層に潜むチビゴミムシとガロアムシの調査を行なった．その折，副産物として採集されたナガゴミムシ類数種を報告しておく．いずれも，小渓畔の地表面から約 40～60 cm の深さに埋没している大きい石塊の下や礫層から掘り出されたもので，すでに越冬態勢にあるものと思われた．

Pterostichus spiculifer BATES ハラトゲナガゴミムシ

1♂，栃木県藤原町湯坂峠，22–X–1988．笠原須磨生採集；2♂♂，3♀♀，栃木県藤原町見通沢，23–X–1988，上野俊一，笠原須磨生採集．

Pterostichus macrogenys BATES ニッコウオオズナガゴミムシ

1♂．栃木県藤原町見通沢，23–X–1988，上野俊一採集．

Pterostichus latistylis TANAKA タナカナガゴミムシ

1♂，1♀，栃木県藤原町見通沢，23–X–1988，上野俊一，笠原須磨生採集．

Pterostichus asymmetricus BATES ミズギワナガゴミムシ

1♀，栃木県藤原町湯坂峠，22–X–1988，山崎柄根採集．

上記のうち，タナカナガゴミムシは，ハラトゲナガゴミムシの集団中にみられた．なお，タナカナガゴミムシの基準型は関東西部山地に分布し，雄交尾器右側片が幅広く，先端部は切断状である．栃木県藤原町産のそれは，幅広いが切断状ではなく，先端がとがっていて，東北地方 (山形県米沢市) のものによく似ている点で興味深い．本種の栃木県における記録は，これまでになかったと思う．

末尾ながら，当日，ご指導とお世話にあずかった上野俊一，山崎柄根両先生，ならびに斉藤明子さんに厚くお礼を申し上げる．

Elytra, Tokyo, **17** (1): 44, May 15, 1989

Records of Some Coleoptera from Uotsuri-jima, the Ryukyus

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So far as I am aware, six species of the Coleoptera belonging to the Scarabaeidae, Tenebrionidae and Brentidae have been recorded from Uotsuri-jima Island, the Ryukyus. Recently, I had a good fortune to examine some Coleoptera collected by Mr. S. ARAI on the Island, through the courtesy of Mr. H. MAKIHARA, to whom I am most grateful. They consist of four species belonging to the Carabidae recorded below. I am indebted to Mr. S. KASAHARA for his kind advice in determining the material.

Carabidae

Colpodes (*Nymphagonum*) *azumai* (HABU, 1973)
16 exs., 30–V ~ 6–VI–1979, S. ARAI leg.
Colpodes (*Metacolpodes*) *buchanani* HOPE, 1831
2 exs., 2–VI–1979, S. ARAI leg.
Eucolliuris litura (SCHMIDT-GÖBEL, 1846)
2 exs., 1–VI–1979, S. ARAI leg.
Calleida (*Callidiola*) *splendidula* (FABRICIUS, 1801)
4 exs., 30–V ~ 3–VI–1979, S. ARAI leg.

Scarabaeidae

Oryctes rhinoceros (LINNÉ, 1858) [TAKARA, 1954]

Tenebrionidae

Gonocephalum senkakuense M.-T. CHÛJÔ, 1979 [CHÛJÔ, 1979]
Gonocephalum coenosum KASZAB, 1952 [CHÛJÔ, 1973, 1979]
Gnesis senkakuensis (M.-T. CHÛJÔ, 1973) [CHÛJÔ, 1973, 1979]
Strongylium costatum M.-T. CHÛJÔ, 1979 [CHÛJÔ, 1979]

Brentidae

Cylas formicarius (FABRICIUS, 1798) [TAKARA, 1954].

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Elytra, Tokyo, **17** (1): 45–52, May 15, 1989

Studies on the Subfamily Steninae (Coleoptera, Oxyporidae) from Japan

XII. Subgenus *Hypostenus* of the Genus *Stenus* LATREILLE, Part 4*

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Abstract The *Stenus hijiri* group of the subgenus *Hypostenus* is dealt with. Five new species, *S. hijiri*, *S. syaca*, *S. carura*, *S. hirashimai* and *S. ryugu* are described and their male genitalia are figured.

5. Group of *S. hijiri*

This group is composed of five new species, *Stenus hijiri*, *S. syaca*, *S. carura*, *S. hirashimai* and *S. ryugu*, and is distributed in Honshu (Chûbu District), Shikoku, Kyushu and Tsushima Is. (Fig. 2).

The diagnosis of the *hijiri* group is as follows: 1) head entirely black as usual, sometimes frontoclypeal area reddish, 2) 6th sternum evenly convex or flat, and 7th sternum convex, flat or shallowly depressed at posteromedian part in male, and 3) male genitalia with median lobes variable in shape, but are pointed at apices in various degrees; parameres each with one or two tufts of short hairs behind the middle of internal margin.

Stenus hijiri sp. nov.

(Fig. 1A)

Male and female. Body length: 3.3–3.9 mm.

Head black and moderately shiny, with reddish frontoclypeal area; pronotum and elytra dark red to dark brown, weakly shiny; abdomen dark brown to black; labrum, antennae, maxillary palpi and legs red to reddish brown.

Head broader than elytra (1.08: 1), 1.73 times as broad as long, frontoclypeal area moderately punctate, with sparse and short pubescence, interocular area with a pair of depressions, the depressions longitudinal, shallow and convergent anteriorly, median part between the depressions gently convex; punctures round, sparser on the middle than near inner margins of eyes, interstices between punctures indistinctly sculptured. Antennae reaching posterior 5/6 of pronotum, 8th segment smallest,

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* Contribution from the Entomological Laboratory, Faculty of Agriculture, Kyushu University, Fukuoka (Ser. 3, No. 285).

9th to 10th each elongate oval, with relative lengths of segments from base to apex as 10: 10: 20: 12: 11: 9: 8: 6: 8: 9: 10.

Pronotum a little shorter than elytra (0.94: 1), about as long as broad, broadest near the middle, moderately constricted at base, side margins much rounded; disk uneven, with a median longitudinal depression, the depression about half times as long as pronotum, with its bottom covered only with microsculpture near the middle; punctures very dense, rough and subrugose, interstices between punctures very narrow.

Elytra broader than long (1.13: 1), weakly constricted at base, side margins gently rounded, hind margins together forming a moderate and V-shaped emargination; disk uneven on basal half, with punctures very dense, rough and irregular. Hind wings much atrophied, 0.19 times as long as elytra.

Legs moderate in length, femora relatively thick, hind tarsi 0.62 times as long as hind tibiae.

Abdomen robust, with punctures round, dense, distinct and regular on 3rd tergum, punctures gradually smaller posteriorly from 3rd to 8th terga; pubescence yellow to golden yellow, short and completely decumbent.

Male. Seventh sternum flat along the mid-line in full length; 8th sternum with a moderate and V-shaped emargination at posterior margin; 9th sternum depressed at posterior part, with an arcuate emargination at posterior margin, apicolateral projections acutely pointed. Genitalia (Fig. 1 A) with median lobe broadest at anterior 4/9, then narrowed both anteriorly and posteriorly, with a short and pointed projection at the middle of apical margin; parameres extending beyond apex of median lobe, weakly curved internally to apical 1/3, then curved externally and broadened apically, with truncate apices, internal side of paramere moderately angulate with a tuft of hairs at anterior 1/3, and with the other tuft near apical margin.

Female. Eighth sternum entire at posterior margin.

Holotype, male (Type No. 2680, Kyushu Univ.), Hirogawara, Mt. Shirane, Yamanashi Pref., 9～13–VII–1982, S. NAOMI leg. Paratypes, 34 exs., same data as holotype.

Distribution. Japan (Honshu: Chûbu District).

Remarks. This new species is allied to *S. carura* sp. nov., but the pronotum and elytra are subrugosely punctate, the 9th sternum is narrowly depressed at the posterior margin in the male, and the parameres of the male genitalia are curved.

Stenus syaca sp. nov.

(Fig. 1 D)

Male. Body length: 3.3 mm.

Body black and weakly shiny; labrum blackish with anterior margin reddish brown; antennae dark red to dark brown; maxillary palpi and legs yellowish brown to brown.

Head broader than elytra (1.16: 1), 1.56 times as broad as long, frontoclypeal area sparsely pubescent and punctate, interocular area with a pair of depressions, the

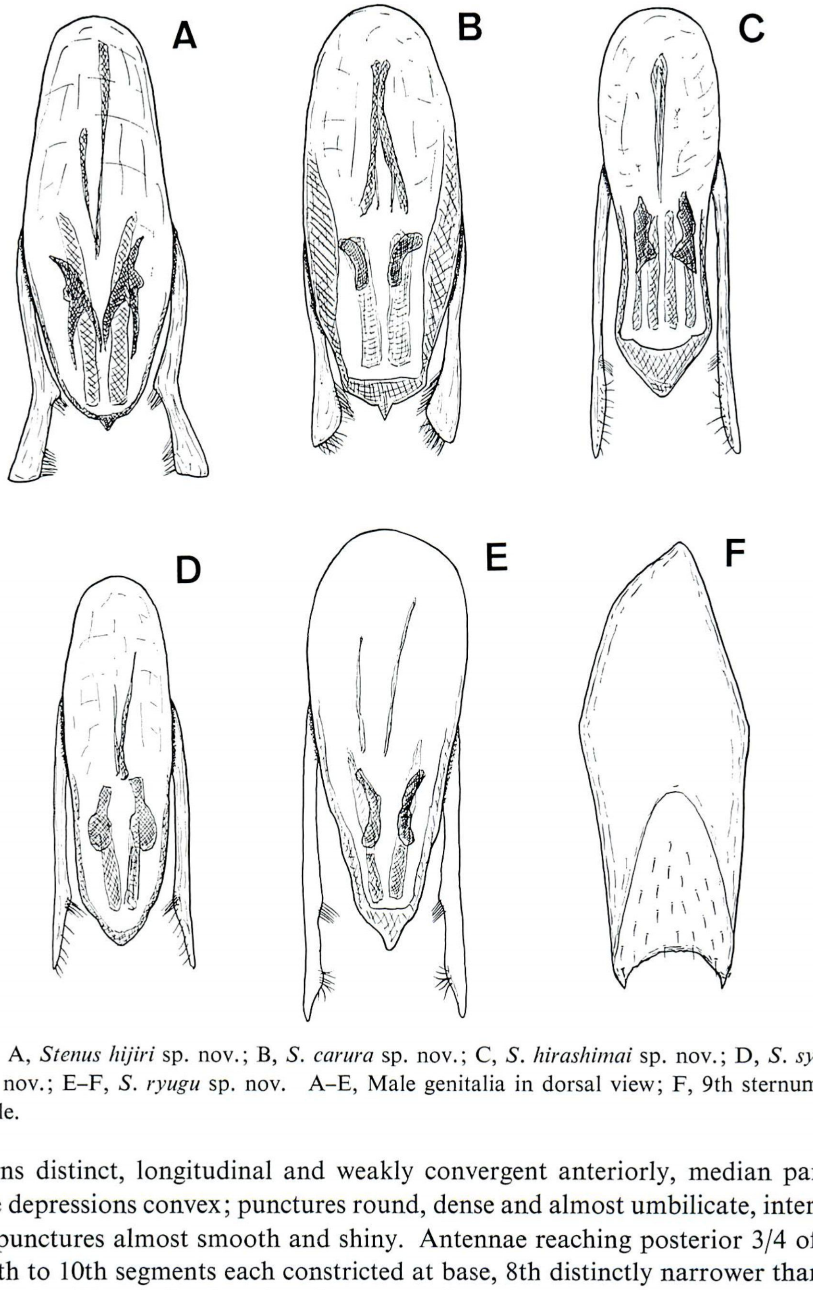

Fig. 1. A, *Stenus hijiri* sp. nov.; B, *S. carura* sp. nov.; C, *S. hirashimai* sp. nov.; D, *S. syaca* sp. nov.; E–F, *S. ryugu* sp. nov. A–E, Male genitalia in dorsal view; F, 9th sternum in male.

depressions distinct, longitudinal and weakly convergent anteriorly, median part between the depressions convex; punctures round, dense and almost umbilicate, interstices between punctures almost smooth and shiny. Antennae reaching posterior 3/4 of pronotum, 8th to 10th segments each constricted at base, 8th distinctly narrower than 9th, 11th pointed, with relative lengths of segments from base to apex as 10: 10: 21: 11: 10: 8: 8: 5: 6: 8: 10.

Pronotum a little shorter than elytra (0.93: 1), as long as broad, broadest at the middle and constricted at base, side margins rounded in anterior 3/4; disk uneven, with a median longitudinal depression, the depression about 2/3 times as long as pronotum, shallow and indistinct; punctures very dense, round and slightly irregular, interstices between punctures indistinctly sculptured.

Elytra about as long as broad, weakly constricted at base, side margins much rounded, hind margins together forming a wide and rather deep emargination; disk almost even, similarly punctate as on pronotum, but the punctures a little larger. Hind wings atrophied into small pieces, 0.21 times as long as elytra.

Legs elongate, hind tarsi 0.70 times as long as hind tibiae.

Abdomen slender and much cylindrical; punctures similar to those in *S. hijiri* sp. nov.; 6th sternum flat at posteromedian part; 7th sternum shallowly concave, with a tuft of golden yellow short hairs at posteromedian part; 8th sternum with a small and arcuate emargination at the middle of posterior margin; 9th sternum with a deep and arcuate emargination at posterior margin and a pair of long hairs at the bases of apicolateral projections, the projections stout and pointed. Genitalia (Fig. 1 D) with median lobe elongate oval, obtusely pointed at apex, lateral margins weakly sinuate; parameres slender, extending beyond apex of median lobe, obliquely truncate, each paramere with a tuft of short hairs at the base of truncation and sparse pubescence on apico-internal part.

Holotype, male (Type No. 2681, Kyushu Univ.), Ohono, Rokuroshi, Fukui Pref., 20~23–VII–1980, H. SASAJI leg.

Distribution. Japan (Honshu: Chubû District).

Remarks. This new species is allied to *S. hirashimai* sp. nov., but the body is smaller (3.3 mm), the 7th sternum is shallowly concave in the male, and the shape of the male genitalia is different. The median lobe is elongate oval and the parameres are shorter and more acutely pointed at the apices.

Stenus carura sp. nov.

(Fig. 1 B)

Male. Body length: 3.7 mm.

Body dark brown to black and moderately shiny, frontoclypeal area reddish along anterior margin; labrum, antennae, maxillary palpi and legs red to reddish brown.

Head broader than elytra (1.11: 1), 1.74 times as broad as long, frontoclypeal area minutely sculptured, with moderately long and sparse pubescence, interocular area shallowly concave, with a pair of depressions, the depressions distinct, longitudinal and convergent anteriorly, median part between the depressions triangular and moderately convex; punctures round, sparse, and sparser on the middle than near inner margins of eyes, interstices between punctures indistinctly sculptured. Antennae slender, reaching posterior 5/6 of pronotum, 3rd to 8th segments subequal in breadth to one another, 9th to 11th forming a loose club, with relative lengths of segments from base to apex as 10: 10: 20: 11: 10: 8: 8: 6: 7: 8: 10.

Pronotum shorter than elytra (0.87: 1), about as long as broad, broadest at anterior 2/5, moderately constricted at base, side margins much rounded in anterior 3/4; disk almost even, with a median longitudinal depression, the depression narrow, distinct and about 0.8 times as long as pronotum; punctures very dense and irregular, interstices between punctures distinctly sculptured.

Elytra broader than long (1.13: 1), constricted at base, side margins weakly rounded, hind margins together forming a wide and V-shaped emargination; disk uneven, with rough punctures. Hind wings reduced, 0.19 times as long as elytra.

Legs moderate in length, femora thick, hind tarsi 0.65 times as long as hind tibiae, with 1st tarsomeres swollen.

Abdomen subparallel-sided, similarly punctate as in *S. hijiri* sp. nov.; 6th sternum flat at posteromedian part; 7th sternum shallowly depressed at posteromedian part, the depression becoming deeper toward posterior margin which is arcuately emarginate; 8th sternum with a moderate emargination; 9th sternum with an arcuate emargination at posterior margin, apicolateral projections acutely pointed. Male genitalia (Fig. 1 B) with median lobe elongate oval, stout, rounded at base, gradually narrowed from posterior 1/3 to distinct apicolateral angles, minutely pointed at the middle of apical margin; parameres extending beyond apex of median lobe, broadened apically, obliquely truncate at apices, each paramere with two tufts of short hairs on apico-internal margin.

Holotype, male (Type No. 2682, Kyushu Univ.), Mt. Ishizuchi, Ehime Pref., 16–VI–1981, S. NAOMI leg.

Distribution. Japan (Shikoku).

Remarks. This new species is allied to *S. hijiri* sp. nov., but the 1st tarsomeres of the hind legs are much thicker, the 7th sternum is arcuately emarginate at the middle of the posterior margin in the male and the male genitalia are different in structure. The apicolateral parts of the median lobes are distinctly angulate and the parameres are almost straight in full length and obliquely truncate at the apices.

Stenus hirashimai sp. nov.

(Fig. 1 C)

Male and female. Body length: 3.5–3.7 mm.

Head and abdomen black and moderately shiny; pronotum and elytra dark reddish brown to black and moderately shiny; labrum blackish, with anterior margin reddish; antennae yellowish except for 5 brownish apical segments; maxillary palpi and legs yellowish red to yellowish brown.

Head broader than elytra (1.08: 1), 1.63 times as broad as long, frontoclypeal area moderately punctate, with short median longitudinal keel, interocular area with a pair of depressions, the depressions longitudinal, very shallow and indistinct in outline, median part between the depressions gently convex; punctures round, moderate in size and almost uniform, interstices between punctures indistinctly sculptured. Antennae slender, reaching posterior 5/6 of pronotum, 7th to 10th segments gradually broadened apically, 11th obtusely pointed, with relative lengths of segments from base to apex as 10: 10: 19: 11: 10: 8: 7: 5: 7: 8: 10.

Pronotum shorter than elytra (0.91: 1), as long as broad, broadest near the middle, side margins moderately rounded; disk slightly uneven, with an indistinct median longitudinal depression; punctures very dense, round and slightly irregular, interstices between punctures indistinctly sculptured.

Elytra broader than long (1.13: 1), weakly constricted at base, side margins gently rounded, hind margins together forming a deep and V-shaped emargination; disk slightly uneven, with punctures elongate oval, dense and a little larger than those on pronotum. Hind wings reduced, 0.38 times as long as elytra.

Legs moderate in length, hind tarsi 0.64 times as long as hind tibiae.

Abdomen robust; punctures round to elongate oval, interstices between punctures much shorter than diameters of punctures on 3rd tergum, punctures becoming gradually smaller and sparser posteriorly from 3rd to 8th terga.

Male. Seventh sternum flat at posteromedian part; 8th sternum with a moderate emargination at the middle of posterior margin; 9th sternum distinctly serrate and almost straight at posterior margin, apicolateral projections acutely pointed. Genitalia (Fig. 1 C) with median lobe gently constricted near anterior 1/3, moderately sclerotized at apical triangular area, obtusely pointed at apex; parameres slender, ex-

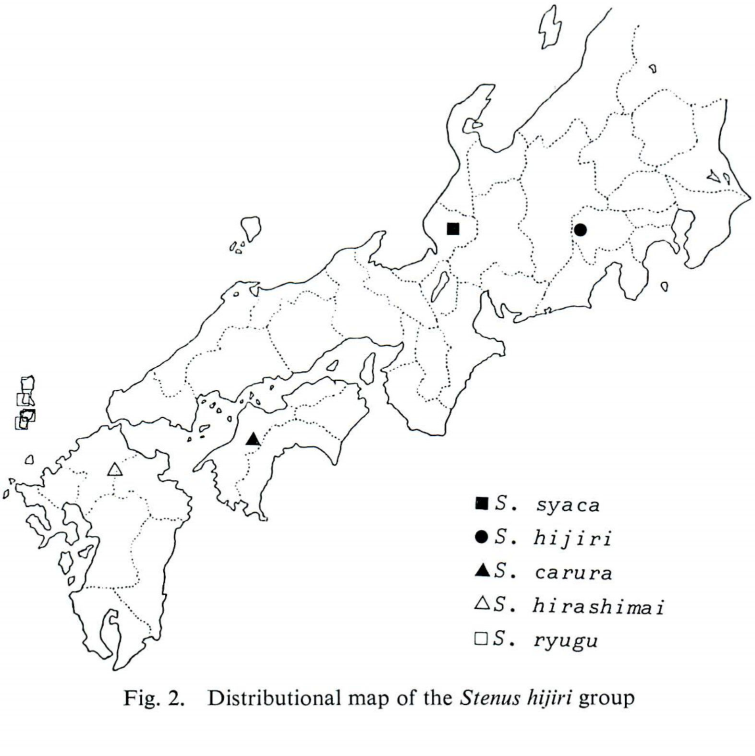

Fig. 2. Distributional map of the *Stenus hijiri* group

tending beyond apex of median lobe, each paramere with a tuft of short hairs at apical 1/4, sparsely haired on apico-internal part.

Female. Eighth sternum entire.

Holotype, female (Type No. 2683, Kyushu Univ.), Mt. Hiko, Fukuoka Pref., 4–IX–1977, H. OHISHI leg. Paratypes, 1 male and 6 females, same data as holotype.

Distribution. Japan (Kyushu).

Remarks. This new species is allied to *S. syaca* sp. nov., but the body is larger (3.5–3.7 mm) and the 7th sternum is flat and provided with a tuft of short hairs at the posteromedian part in the male. The median lobe of the male genitalia is constricted near the anterior 1/3 and the parameres are longer.

This species is named in honor of Prof. Y. HIRASHIMA of the Entomological Laboratory, Kyushu University.

Stenus ryugu sp. nov.

(Fig. 1 E–F)

Male and female. Body length: 3.1–3.5 mm.

Head and abdomen black and very shiny; pronotum and elytra dark red to black; labrum dark brown to black, with anterior margin reddish; antennae with 1st to 2nd segments yellow to yellowish red, 3rd to 8th reddish brown, 9th to 11th brown to dark brown; maxillary palpi and legs pale yellow to yellowish brown.

Head broader than elytra (1.19: 1), 1.67 times as long as broad, frontoclypeal area well convex, with sparse punctures and pubescence, interocular area with a pair of depressions, the depressions longitudinal, moderately deep and weakly convergent anteriorly, median part between the depressions elongate trapezoidal, moderately convex; punctures round, small and sparse, interstices between punctures indistinctly sculptured. Antennae slender, reaching posterior 4/5 of pronotum, 3rd to 8th segments subequal in breadth to one another, 9th to 11th forming a loose club, with relative lengths of segments from base to apex as 10: 10: 20: 11: 10: 8: 7: 5: 7: 7: 9.

Pronotum about as long as elytra, a little longer than broad (1.06: 1), broadest at anterior 2/5, weakly constricted at base, side margins much rounded; disk almost even, with an indefinite median longitudinal depression; punctures round, very dense and almost regular, interstices between punctures distinctly sculptured.

Elytra broader than long (1.11: 1), moderately constricted at base, side margins weakly rounded, hind margins together forming a wide and arcuate emargination; disk almost even, with punctures large, round, dense and regular. Hind wings reduced, 0.26 times as long as elytra.

Legs moderate in length, femora thick, hind tarsi 0.68 times as long as hind tibiae.

Abdomen robust and much cylindrical; punctures round, moderate in size and dense on 3rd tergum, interstices between punctures distinctly narrower than diameters of punctures on 3rd tergum, and about as long as the diameters on 5th tergum, punctures very fine and sparse on 8th tergum.

Male. Eighth sternum with a shallow and arcuate emargination at the middle of posterior margin; 9th sternum shallowly arcuate (Fig. 1 F) or almost straight at posterior margin, apicolateral projections pointed. Genitalia (Fig. 1 E) with median lobe much bulbous in basal half, narrowed apically, slightly sinuate at lateral margins and pointed at apex; parameres slender, extending beyond apex of median lobe, each paramere with a tuft of straight hairs at posterior 1/3, and the other tuft of curved hairs near apex.

Female. Eighth sternum obtusely pointed at the middle of posterior margin.

Holotype, male (Type No. 2684, Kyushu Univ.), Mt. Shiratake, Tsushima Is., Nagasaki Pref., 17–X–1983, S. NOMURA leg. Paratypes, 5 exs., same data as holotype; 9 exs., Mehoro, Tsushima Is., Nagasaki Pref., 20–X–1983, S. NOMURA leg.; 2 exs., Mt. Tatera, Tsushima Is., Nagasaki Pref., 16–X–1983, S. MOMURA leg.; 1 ex., Mt. Mitake, Tsushima Is., Nagasaki Pref., 19–X–1983, S. NOMURA leg.

Distribution. Japan (Tsushima Is.).

Remarks. This new species is similar to *S. hijiri* sp. nov. and *S. carura* sp. nov., but the eyes are more convex, the 7th sternum is evenly convex at the posteromedian part in the male, and the parameres of the male genitalia are slenderer and pointed at the apices.

Acknowledgements

I wish to express my sincere gratitude to Prof. Y. HIRASHIMA and Assoc. Prof. K. MORIMOTO of the Entomological Laboratory, Kyushu University for their constant guidance. I am also indebted to Dr. H. SASAJI (Fukui University), Mr. S. NOMURA (Kyushu University) and Mr. H. OHISHI (Kyoto City) for their kind offer of valuable stenine specimens examined in this paper.

要　約

直海俊一郎：日本産メダカハネカクシ亜科の研究. XII. メダカハネカクシ属 *Hypostenus* 亜属, 4. —— 本論文で *S. rufescens* 複合群の中の *hijiri* 種群を論じた. 本種群は, *Stenus hijiri*, *S. syaca*, *S. carura*, *S. hirashimai* および *S. ryugu* の 5 新種から成り, 本州（中部地方), 四国, 九州および対馬に分布している. 本種群は, 1) 頭部は通常黒色だが, しばしば額頭盾部は赤みをおび, 2) 雄の第 6 腹板中央後方は滑らかな凸状であるか平たく, 第 7 腹板中央後方は凸状か, 平たいかあるいは浅く凹み, 3) 雄交尾器中央片は通常先端部が尖り, 各側片は 1 あるいは 2 つの短毛束を中央より後方の内縁部にそなえる.

hijiri 種群のうち, *S. hijiri*, *S. carura* および *S. ryugu* の 3 種では, 複眼間中央域が疎に点刻され, 雄交尾器各側片は 2 つの短毛束をそなえている. 一方, *S. hirashimai* および *S. syaca* の 2 種では, 複眼間中央域は普通にあるいは密に点刻され, 雄交尾器各側片は1つの短毛束をそなえている.

[Note] References will be given at the end of this series.

Elytra, Tokyo, **17** (1): 53–55, May 15, 1989

A New Species of the Genus *Lathrimaeum* (Coleoptera, Staphylinidae) from Japan

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Abstract A new species of the genus *Lathrimaeum* is described under the name of *L. hammondi*, on the basis of the specimen previously reported by SHARP (1874) as *Lathrimaeum atrocephalum*.

Through the courtesy of Dr. P. M. HAMMOND and Dr. R. ALDRIDGE, the author had an opportunity to examine an interesting specimen, which was recorded by SHARP (1874) under the name of *Lathrimaeum atrocephalum* GYLLENHAL. As the result of a comparative study between this specimen and true *atrocephalum*, it became apparent that the former should be distinguished from the latter as a new species. It will be described in the present paper.

Before going further, the author wishes to express his hearty thanks to Dr. P. M. HAMMOND and Dr. R. ALDRIDGE of the British Museum (Natural History) for their kindness in giving him the opportunity to study the interesting specimen. Deep gratitude is also due to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for his advice on the present study, and to Dr. W. SUZUKI, who kindly took photographs inserted in this paper.

Lathrimaeum hammondi Y. WATANABE, sp. nov.

(Fig. 1)

Lathrimaeum atrocephalum: SHARP, 1874, Trans. ent. Soc. London, **1874**: 98. —— ZANETTI, 1987, Fn. Ital., **25**: 296. [Nec GYLLENHAL, 1827.]

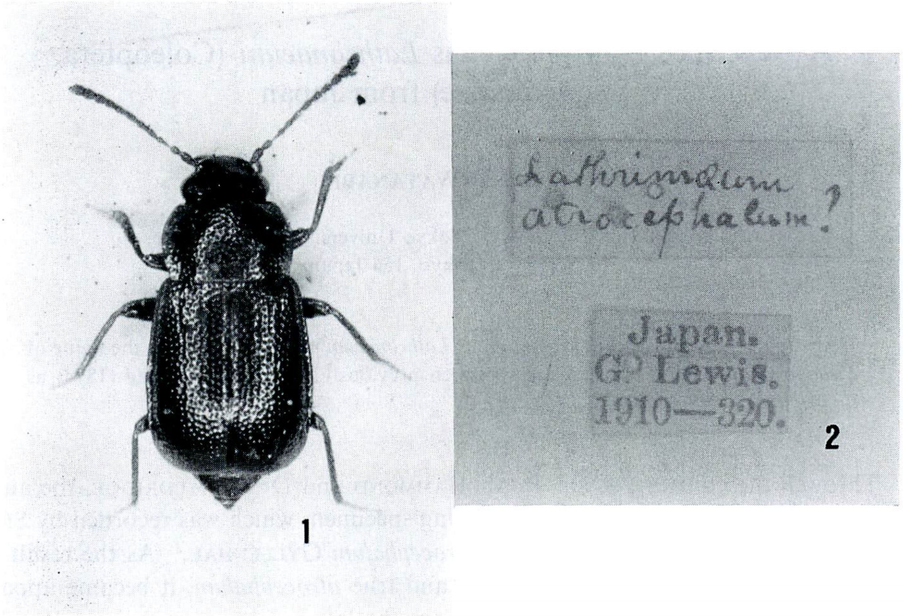
Anthobium atrocephalum: ADACHI, 1957, J. Toyo Univ., (11): 197. —— SHIBATA, 1976, Annual Bull. Nichidai Sanko, (19): 113. [Nec GYLLENHAL, 1827.]

Body length: 2.8 mm (from front margin of head to anal end).

Somewhat similar to *L. atrocephalum* in general appearance, but can be distinguished by the following points: pronotum less transverse (width/length=1.52), elytra not so long (length/width=1.15), less than 2.5 times as long as pronotum.

Body somewhat spindle-shaped and convex. Colour yellowish brown and shining, with antennae darkened towards the extremities and head reddish brown.

Head subdepressed above, though gently elevated at the median part, evidently broader across compound eyes than long (width/length=1.40); postocular



Figs. 1–2. *Lathrimaeum hammondi* Y. WATANABE, sp. nov., holotype (1) and the labels attached to the specimen (2).

area arcuate and very short, about one-fourth as long as the longitudinal diameter of each eye, which is prominent and provided below with a distinct orbital ridge; surface moderately densely, coarsely punctured, except for impunctate frontal area, provided with a depression inside each antennal tubercle and also with a narrow oblique depression on each side of the middle in posterior half; ocelli convex and distinct, the distance between them being evidently larger than that from the outside of ocellus to the inner margin of each eye. Antennae slightly thickened towards the extremities and moderately elongate, hardly extending to the posterior margin of pronotum, with proximal three segments polished and the remainings opaque, 1st segment robust and nearly twice as long as broad, 2nd about 1.4 times as long as broad, though much shorter (2nd/1st=0.58) and somewhat narrower (2nd/1st=0.81) than 1st, 3rd elongate and dilated apicad, more than twice as long as broad and clearly longer (3rd/2nd=1.43) but a little narrower (3rd/2nd=0.86) than 2nd, 4th to 6th gradually increasing in length, each distinctly longer than broad, 7th to 9th gradually decreasing in length, 7th and 8th each longer than broad, 9th as long as broad, 10th as long as broad, somewhat longer (10th/9th=1.17) and broader (10th/9th=1.17) than 9th, apicalmost semioval, a little longer than broad (length/width=1.35) and more than 1.5 times as long as 10th, bluntly pointed at the apex.

Pronotum convex and distinctly transverse (width/length=1.52), evidently broader than head (pronotum/head=1.46), widest near the middle and more strongly narrowed posteriad than anteriad; lateral margins finely bordered and very obsoletely crenulate, each arcuate in anterior two-thirds and almost straight in posterior third, anterior margin gently emarginate at the middle, posterior margin slightly arcuate; posterior angles more distinct than anterior ones, which are narrowly rounded; surface densely covered with strong and coarse punctures, provided with a narrow longitudinal depression on posterior two-thirds of inner side of each lateral margin. Scutellum small and subtriangular, bearing a few coarse punctures on the surface. Elytra convex and somewhat dilated posteriad, a little longer than broad (length/width=1.15), more than twice as long as and a little broader (elytra/pronotum=1.27) than pronotum, widest at posterior three-fifths and more strongly convergent anteriad than posteriad; lateral margins feebly arcuate in posterior two-thirds and nearly straight in anterior third, posterior margin slightly emarginate at the middle; surface densely and coarsely punctured, the punctures irregularly arranged in longitudinal rows.

Abdomen concealed by elytra, except for four visible segments which are strongly narrowed towards apical end; surface of each tergite practically impunctate, though covered with extremely fine ground sculpture. Legs relatively slender, each tibia provided with a number of short spines; four proximal segments of each protarsus somewhat widened.

Holotype: ♂, Japan, G. LEWIS leg. 1910–320 (in British Museum).

Distribution. Japan.

The specific name is dedicated to Dr. P. M. HAMMOND, who gave the author the opportunity to examine the unique specimen preserved in the British Museum.

要　約

渡辺泰明：日本産 *Lathrimaeum* 属の 1 新種. ——SHARP が 1874 年に *Lathrimaeum atrocephalum* GYLLENHAL として日本から記録した個体を検した結果，前胸背板および上翅の形によって *atrocephalum* から容易に区別することができ，新種と判明したので，*L. hammondi* と命名記載した.

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Elytra, Tokyo, **17** (1): 56, May 15, 1989

An Unrecorded *Philonthus* (Coleoptera, Staphylinidae) from Japan

Yasuaki WATANABE

Through the kindness of Dr. I. FUJIYAMA, I obtained a series of specimens of an interesting species belonging to the genus *Philonthus*. At my request, Dr. A. SMETANA studied and determined it as *P. variipennis* KRAATZ, which had originally been described from Ceylon and India. It has not been reported from Japan until now. The collecting data of these specimens are as given below.

Philonthus variipennis KRAATZ

Philonthus variipennis KRAATZ, 1859, Arch. Naturg., **25**: 85.
Other references are omitted.

Specimens examined. 12 ♂♂, 9 ♀♀, Sohmachi, Kikai-jima Is., Kagoshima Pref., Japan, 23–VIII–1960, I. FUJIYAMA leg.; 1 ♀, Yuwan, Amami-ohshima Is., Kagoshima Pref., Japan, 22–VIII–1960, I. FUJIYAMA leg.

Distribution. Japan (Kikai-jima Is., Amami-ohshima Is.); Oriental Region.

I wish herewith to express my hearty thanks to Dr. I. FUJIYAMA for his kind supply of the specimens, and to Dr. A. SMETANA for his advice on the determination of this species.

Elytra, Tokyo, 17 (1): 57–60, May 15, 1989

Some Notes on Japanese Melyridae (Coleoptera)

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and

Walter WITTMER

Naturhistorisches Museum Basel, Switzerland

Abstract A new melyrid beetle, *Haplomalachius ishiharai* sp. nov., is described from Central Japan. A Ryukyuan melyrid species, *Attalus tokara* M. SATÔ, is synonymized with *A. trochantinus* WITTMER. The female of *Hypebaeus picticollis* (KIESENWETTER) is briefly described and illustrated.

Haplomalachius ishiharai M. SATÔ et WITTMER, sp. nov.

(Figs. 1–6)

Malachius vitticollis?: NAKANE, 1985, Fragm. coleopt., (38/40): 158 (nec KIESENWETTER, 1874).

Male. Body closely covered with aurocinereous pubescence, almost black, but with coppery luster on pronotum and head. Mouth-parts, clypeus, labrum, prosternum, trochanter, tibiae, tarsi, lateral sides of pronotum and elytra pale yellow to brownish yellow; terminal segments of all tarsi and metatrochanter darkened.

Head with eyes slightly shorter than breadth of prothorax, slightly convex, uneven with a depression between eyes; surface microreticulate on anterior area and finely and sparsely punctate on posterior area; eyes moderate, distance between them 2.4 times the diameter of an eye; antennae (Fig. 3) about half the length of body, serrate from 3rd to 10th segments, 2nd the shortest, 11th the longest. Pronotum about 1.2 times as broad as long; lateral sides gently rounded; each angle rounded; surface finely and closely punctate, sometimes furnished with a shallow fovea at each postero-lateral corner. Elytra a little narrower than pronotum at the base and about 1.3 times as broad as pronotum at the apical broadest point; lateral sides somewhat dilated apically with rounded apices; surface transversely rugose. One or two terminal segments of abdomen protruding beyond the apices of elytra. Apical tergite slightly emarginate at the tip (Fig. 5).

Length: 3.8–3.9 mm (from apex of labrum to elytral apices); breadth: 1.2–1.3 mm.

Female. Antennae (Fig. 4) shorter than in male, slightly serrate. At least 3 terminal segments of abdomen protruding beyond elytra. Apical tergite rounded at the tip (Fig. 6).

Length: 4.4–5.0 mm (from apex of labrum to elytral apices); breadth: 1.6–1.9 mm.

Holotype: ♂, Ishidoshuku, Saitama Pref., 11–V–1986, M. SATÔ leg (in coll. Nagoya Women's Univ.). Allotype: ♀, same data as for the holotype (in coll. Natn. Sci. Mus., Tokyo). Paratypes: 2 ♂♂, 10 ♀♀, same data as for the holotype; 1 ♂, Dôman, Toda, Saitama Pref., 8–V–1986, M. HASEGAWA leg.; 1 ♂, Ôifutô, Tokyo, 1–V–1983, A. IZUMI leg.; 14 exs., Ômiya-shi, Saitama Pref., 10–V–1988, T. SHIMOMURA leg. (in coll. Naturh. Mus. Basel; Natn. Sci. Mus., Tokyo; Ent. Lab., Ehime Univ.; and Nagoya Women's Univ.).

This new species can be compared with *Cordylepherus xantholoma* (KIESENWETTER) on account of its simple apex of elytra. However, the head of *H. ishiharai*, is simple between antennal sockets, while that of the latter is of completely different shape.

This new species is dedicated to Emer. Prof. Tamotsu ISHIHARA on the occasion of his seventieth anniversary. SATÔ was graduated under the supervision of Professor ISHIHARA, and always entertains a profound respect for him.

Attalus trochantinus WITTMER

Attalus trochantinus WITTMER, 1982, Spec. Iss. Mem. Retir. Emer. Prof. M. Chûjô, 53 (Insel Oshima). —— NAKANE, 1983, Kita-Kyûshû no Konchû, **30**: 162.

Attalus tokara M. SATÔ, 1986, Ent. Pap. pres. Kurosawa, Tokyo, 239 (Is. Ko-takara-jima). —— NAKANE, 1987, Kita-Kyûshû no Konchû, **34**: 3. *Syn. nov.*

Attalus tokara is a mere colour variation of *A. trochantinus*, and is considered to be a synonym of the latter.

Hypebaeus picticollis (KIESENWETTER)

(Fig. 7)

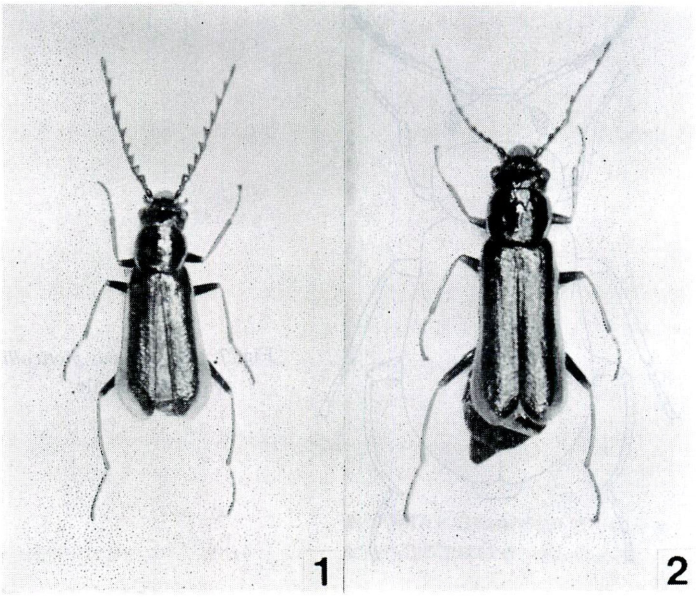
Ebaeus picticollis KIESENWETTER, 1874, Berl. ent. Z., **18**: 287 (Nagasaki).

Hypebaeus picticollis: NAKANE, 1983, Kita-Kyûshû no Konchû, **30**: 161.

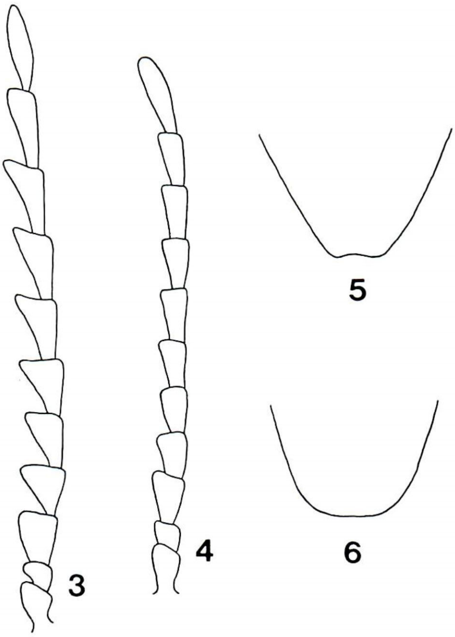
Until now, female of this species has not been known. Fortunately, we were able to examine some female specimens through the courtesy of Emer. Prof. M. CHÛJÔ and Mr. M. SAKAI. A brief description and illustration is given herein.

Female. Body closely covered with fine aurocinereous pubescence. Head and most parts of ventral side brownish black; pronotum, 6 terminal segments of antennae and basal halves of femora brown; elytra dark brown; buccal appendages, 5 basal segments of antennae and legs yellowish.

Head almost smooth on the surface; eyes lateral, somewhat large and separated by about 3.2 times the diameter of each eye; antennae slightly serrate. Pronotum transversely oval, about 1.3 times as broad as long; surface smooth. Elytra widened posteriad, about 1.6 times as broad as pronotum, about 1.3 times as long as broad; surface closely punctate; integument microreticulate. Legs slender, metatibia gently curved outwards.



Figs. 1–2. *Haplomalachius ishiharai* sp. nov.; 1, male; 2, female.



Figs. 3–6. *Haplomalachius ishiharai* sp. nov.; 3, 5, male; 4, 6, female; 3–4, antennae; 5–6, last tergites.

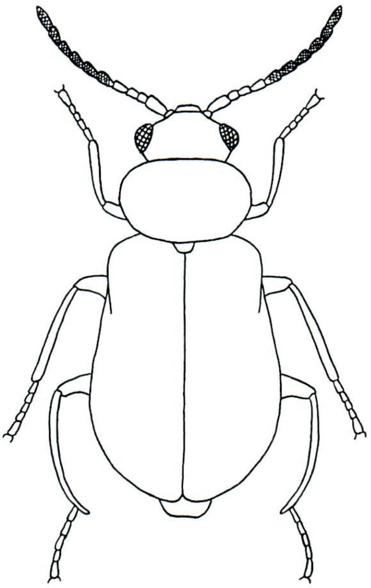


Fig. 7. *Hypebaeus picticollis* (KIESENWETTER), female.

Length: 2.5–2.8 mm; breadth: 1.2–1.3 mm.

Specimens examined. 1 ♀, Kuroson, Kôchi Pref., 19～20–VII–1957, M. CHÛJÔ leg.; 2 ♀♀, Shiroyama, Tokushima Pref., 18–V–1967, M. SAKAI leg.

要　約

佐藤正孝・Walter WITTMER：日本産ジョウカイモドキ科の覚え書．——東京周辺の草地的環境で得られた *Haplomalachius* 属の 1 種を新種として記載した．種名の *ishiharai* は，佐藤の恩師，愛媛大学名誉教授石原保先生の古希を祝して献名した．トカラ列島小宝島から記載された *Attalus tokara* M. SATÔ は，奄美大島から記載された *A. trochantinus* WITTMER の単なる色彩変異にすぎないので，ここでシノニムとして扱った．*Hypebaeus picticollis* (KIESENWETTER) は，これまで雌が知られていなかったので，簡単に記載し図示した．

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Elytra, Tokyo, **17** (1): 61–64, May 15, 1989

A New *Laena* (Coleoptera, Tenebrionidae) from Northwest Thailand[1]

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Abstract A new humicolous tenebrionid beetle of the genus *Laena* is described from the highest mountain in Northwest Thailand under the name of *L. uenoi*.

The genus *Laena* is a group of small tenebrionid beetles usually found under humus in temperate broadleaved forests. During the zoological survey made by the National Science Museum, Tokyo, Dr. S.-I. UÉNO, leader of the party, collected several specimens of *Laena* near the summit of Mt. Doi Inthanon, which is the highest mountain in Thailand. They were submitted to me for taxonomic study, and were found to belong to a new species. It will be described in the present paper under the name of *Laena uenoi*. The type material of the new species is deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo.

I wish to experss my deep gratitude to Dr. S.-I. UÉNO, who gave me the opportunity to study very interesting material and reviewed the original manuscript of this paper. Thanks are also due to Dr. Ottó MERKL, Természettudományi Múzeum, Budapest, for permitting a loan of type specimens for my comparative study, and to Mr. Kaoru SAKAI for taking photographs used in this paper.

Laena uenoi sp. nov.

(Figs. 1, 3–4)

Blackish brown, with basal halves of antennae, elytra and legs lighter in colour, mouth parts and hairs on surfaces brownish yellow; dorsal surface gently shining and feebly micro-shagreened, ventral surface moderately shining. Rather elongate, moderately convex though slightly flattened posteriorly, rather distinctly constricted between bases of pronotum and elytra.

Head somewhat octagonal, gently convex above, sparsely scattered with punctures, sparsely clothed with rather long, fine hairs; clypeus somewhat transverse hexagonal, convergent forwards and bent downwards in anterior half, with apex truncate; frontoclypeal border transversely, finely though clearly sulcate, each end of sulcus bent forwards and reaching outer margin; genae raised and obtusely produced antero-laterad;

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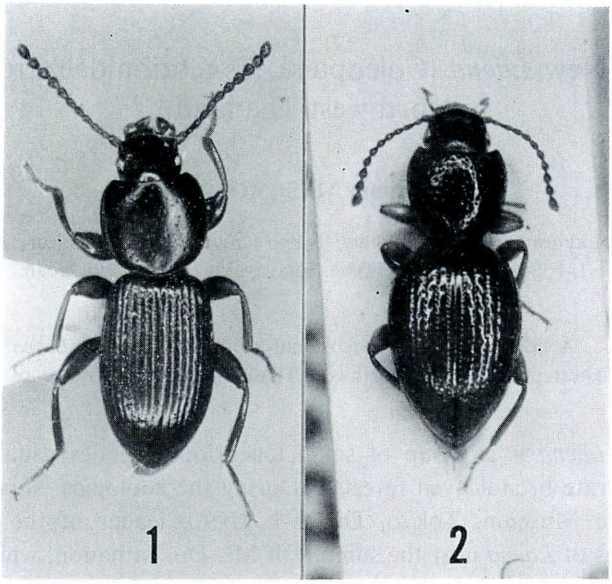
[1] This study is supported by the Grant-in-aid for Overseas Scientific Research No. 58041074 from the Ministry of Education, Science and Culture, Japan.

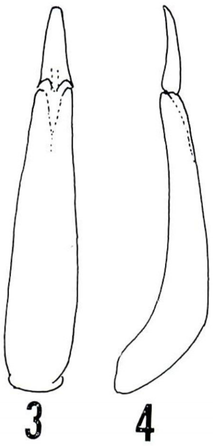


Figs. 1–2. —— 1. *Laena uenoi* sp. nov., ♂ holotype from Mt. Doi Inthanon in Northwest Thailand. —— 2. *L. acuticollis* KASZAB, ♀ paratype, from Darjeeling in West Bengal, Northeast India.

eyes gently dilated, weakly produced laterad, the distance between them about 7 times their transverse diameter. Mentum rather hexagonal though widest at apical 2/5, feebly coriaceous, depressed in apical 2/5, convex medially; gula rather parabolic, finely impressed anteriorly along border; terminal segment of maxillary palpus rather noticeably dilated. Antennae reaching basal portion of pronotum, ratio of the length of each segment from basal to apical: 0.45, 0.2, 0.3, 0.25, 0.25, 0.25, 0.3, 0.3, 0.3, 0.3, 0.35.

Pronotum a little less than 1.2 times as wide as long, widest at apical 1/3; apical margin gently and widely emarginate, finely bordered on each side; base arcuate though feebly sinuous on each side, finely bordered; sides gradually narrowed towards apex and base, moderately declined to finely bordered lateral margins, which are easily visible from above; front angles obtuse; hind angles almost rounded; disc gently convex, sparsely scattered with larger and smaller punctures intermixed, each with a long fine hair, with the basal portion often weakly, longitudinally impressed at middle.

Elytra 1.6 times as long as wide, nearly as wide as and almost twice as long as pronotum, widest at the middle, gradually narrowed towards base and roundly so towards apices; disc punctate-striate, the striae rather fine, the punctures small, closely set and notching intervals; intervals moderately convex above, very sparsely scattered with punctures, each with a long fine hair; sides rather steeply declined to rather finely but clearly bordered lateral margins, which are visible from above in apical 1/3.



Figs. 3–4. Male genitalia of *Laena uenoi* sp. nov.; dorsal (3) and lateral (4) views.

Prosternum fairly broad, feebly micro-shagreened, sparsely scattered with fine punctures, with intercoxal space weakly raised; mesosternum fairly small though the anterior portion is largely set beneath prosternum, with the posterior portion raised in something like V-shape and coriaceous; metasternum rather short but wide, feebly shagreened, sparsely punctate and haired. Abdomen rather broad, feebly micro-shagreened, sparsely and finely punctate and haired.

Legs rather stout though simple; femur strongly thickened; ratio of the length of pro-, meso- and metatarsomeres from basal to apical: 0.6, 0.35, 0.3, 0.25, 1.2: 0 7, 0.35, 0.3, 0.25, 1.2; 1.5, 0.8, 0.3, 1.65, respectively; claws falciform and sharp.

Male genitalia slender fusiform, with basal piece elongate, apex of parameres rounded.

Body length: 4.8–6.8 mm.

Type series. Holotype. ♂, Doi Inthanon, 2,300 m, Changwat Chiang Mai, Northwest Thailand, 20–X–1983, S. UÉNO leg. Paratypes. 2 exs., same data as for the holotype.

Notes. This new species somewhat resembles *Laena acuticollis* KASAZB, 1978, originally described from Darjeeling, Northeast India, but can be distinguished from the latter by the body less convex and less strongly constricted between the bases of pronotum and elytra, the fore body above less closely punctate, the front angles of pronotum not acute, and the elytra less strongly narrowed towards apex.

According to Dr. UÉNO, all the specimens of the type series were collected by sifting humus accumulated at the sides of rotten trunks of dead fallen trees in an evergreen broadleaved forest near the headspring of a stream.

要　約

益本仁雄：北西タイ産 *Laena* 属 (Tenebrionidae, Adeliini) の1新種．——北西タイのドイ・インタノン山から採集された *Laena* 属の甲虫を新種と認め，*Laena uenoi* MASUMOTO と命名した．

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Elytra, Tokyo, **17** (1): 65–86, May 15, 1989

Female Reproductive Organs of Lepturine Cerambycid Beetles from Japan, with Reference to their Taxonomic Significance (Part 1)

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Abstract Brief descriptions with illustrations of female reproductive organs are given for 57 species of lepturine cerambycid beetles belonging to 44 different genera, and their taxonomic significance is scrutinized. Configuration of ovipositor and the presence or absence of bursa copulatrix can be regarded as bearing taxonomic importance at higher levels, the former at generic or subgeneric level and the latter at tribal or generic level. On the other hand, spermatheca with its gland and duct can be employed at a lower level of taxonomy, either subgeneric or specific. Classification suggested by the study of female genitalia mostly accords with the current one based upon external morphology, but in certain cases, there is considerable discrepancy between the two. Such cases are specially noted, but taking taxonomic actions is left for future comprehensive studies.

The first part is devoted to the introductory notes and descriptions of the Xylosteini through the Stenocorini.

Introduction

The family Cerambycidae is one of the most important and well known groups of the Coleoptera, containing more than 20,000 known species described from all over the world. In Japan alone, more than 700 species belonging to 8 subfamilies have been described, and the number is still increasing bit by bit with the progress of faunal studies.

Unfortunately, however, it cannot be said that the classification of cerambycid beetles has not yet gained consensus of specialists' opinions, mainly because it has been based on external characters which can be observed without making dissections of beautiful specimens. Studies of male genitalic characters have been made in recent years, but nearly always at the species level. Apart from the Cerambycidae, male genitalic characters have been extensively adopted in classifying various Coleoptera, most widely at the species level but also at tribal or still higher levels. As regards female sexual organs, however, very little has been published on their morphology and taxonomic implications.

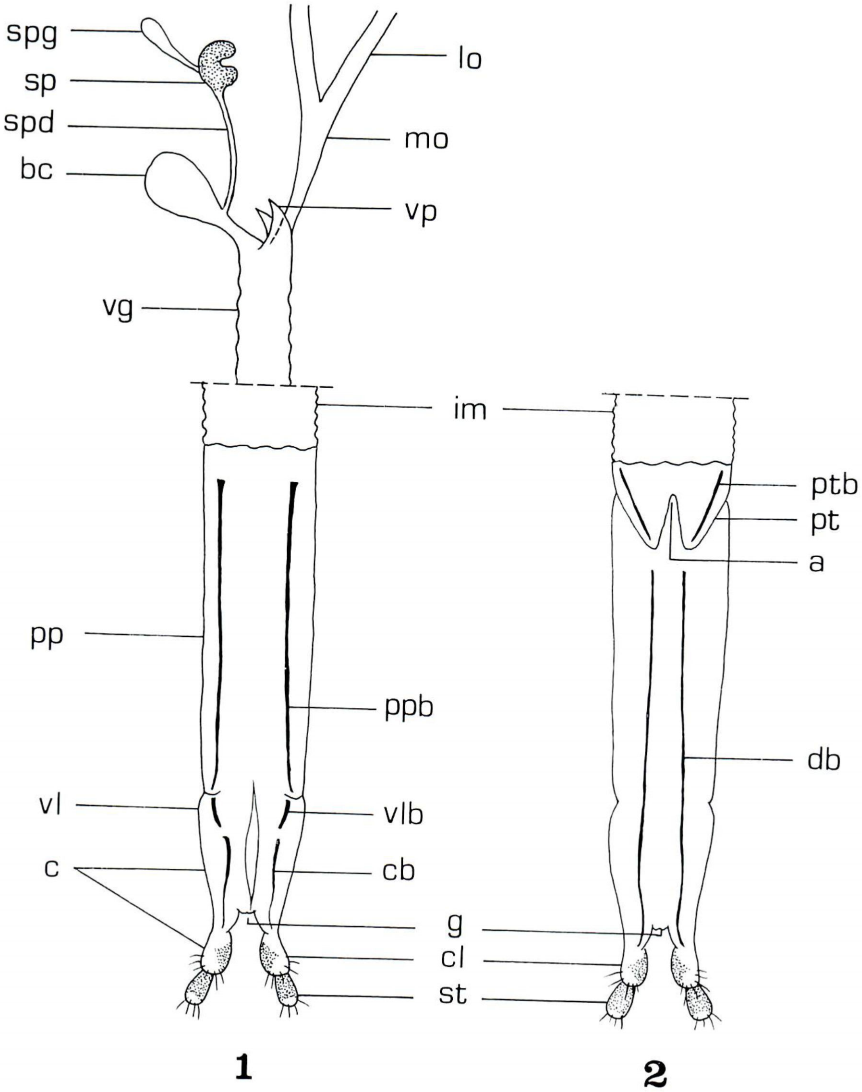
In 1927, Tanner published the result of his extensive investigation of the female genitalia of the Coleoptera, and noted that major classification of the order should be reconsidered in several points. He studied seven cerambycid species, and gave illustrations of the female genitalia of *Rhagium lineatum* (Olivier) (figs. 165–166) as an example of the Lepturinae. More studies have been made after the World War II, mainly on curculionid (*e.g.*, ASLAM, 1961, and MORIMOTO, 1962) and chrysomelid (*e.g.*, MANN & CROWSON, 1983) beetles but also carabid (*e.g.*, ISHIKAWA, 1973) and other groups.

As for cerambycid beetles, ARAKAWA (1939) examined reproductive organs of the two sexes of two *Purpuricenus* species, and stated that female genitalia were more useful than male ones in discriminating them. More recently, NISHIO (1956 a–b, 1959, 1968) published four short papers, in which ovipositors of a series of species including four lepturines were described. These are the first reports dealing with the female genitalia of Japanese lepturines. This line of study was followed up by KUBOKI (1980 a–c, 1981 a–b), who put emphasis on the taxonomic importance of female genitalia in cerambycids. He gave illustrations of spermathecae for more than 80 species, the majority of which were lepturines. Whole reproductive systems were, however, described only on five lepturines, one parandrine and six prionines. I myself became aware of taxonomic importance of female reproductive organs in cerambycid beetles (SAITO, 1984 b), and have been describing them from time to time since 1981. As the results, descriptions of ovipositors and/or spermathecae were already given for 13 species of lepturines and 1 lamiine (TAKASU, 1981; SAITO, 1984 a; S. & A. SAITO, 1984, 1986, 1988; MAKIHARA & SAITO, 1985; MAKIHARA & SAITO, in MAKIHARA *et al.*, 1985). Chinese entomologists also became interested in the female genitalia of cerambycids, and recently published the results of their studies on the Lamiinae (DU, 1986 a–b; LI, 1986 a–b).

On the other hand, IUGA and ROȘCA (1962) gave a detailed account of female genitalia of some cerambycids and discussed on the origins of their components. Morphological studies in a similar line were carried out by CHANG (1965), HUTCHESON (1980) and MANN and CROWSON (1983), on the basis of *Monochamus*, *Arhopalus* and *Hylotrupes*, respectively. Their investigations were not primarily concerned with the taxonomic value of female genitalia, but careful terminology based upon detailed analyses is very important not only for morphologists but also for taxonomists.

In the present paper, I am going to describe female reproductive organs of some five dozens of lepturine cerambycid beetles from Japan. Though many other species were also examined, their genitalia were not basically different from the ones to be described and illustrated. Their names will be noted after the descriptions of related species. Terminology of genitalic components mainly follows HUTCHESON's (1980), but other important works such as LINDROTH (1957), LINDROTH and PALMEN (1970) and so on were also cited.

Before going into further details, I wish to express my hearty thanks to the late Professor Hiromasa SAWADA and Professor Yasuaki WATANABE of the Entomological Laboratory, Tokyo University of Agriculture, under whose suggestion and supervision the main part of the present study was carried out. Deep indebtedness should be expressed to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, who kindly read through the original manuscript of this paper and gave me helpful



Figs. 1–2. Diagram of female reproductive organ in lepturine cerambycid beetles; 1, ventral view; 2, dorsal view (only ovipositor). Abbreviations: a, anus; bc, bursa copulatrix; c, coxite; cb, coxite baculum; cl, coxite lobe; db, dorsal baculum; g, gonopore; im, intersegmental membrane of 8th and 9th segments; lo, lateral oviduct; mo, median oviduct; pp, paraproct; ppb, paraproct baculum; pt, proctiger; ptb, proctiger baculum; sp, spermatheca; spd, spermathecal duct; spg, spermathecal gland; st, stylus; vg, vagina; vl, valvifer; vlb, valvifer baculum; vp, vaginal plate.

advice. I am also indebted to many friends of mine, whose names are given under the heading of "Material used", for their kind support in supplying valuable specimens, above all to Professor Keiichi KUSAMA, Dr. Shûji OKAJIMA and Mr. Tohru SHIMOMURA, without whose aid this study could not have been completed. Last but not least, I have to thank my husband, Shusei, for his support extended to me during the course of this study.

Materials and Method

Fifty-seven species of Japanese lepturine cerambycid beetles belonging to 44 different genera were used for this study. One to three specimens of each species were dissected, and their genitalia were examined. Only the collecting data of the specimens used for drawings were given next to the headings of respective species.

Female genitalia from dried materials were dissected out from the abdomen boiled in 7% potassium hydroxide solution for about ten minutes, cleansed in 70% ethanol, and then stained with eosin. Observations of the materials thus prepared were mostly carried out in 70% ethanol under a binocular microscope. Sketches were prepared for the ventral and dorsal aspects of ovipositor and the ventral aspects of internal reproductive organ.

Morphology of Female Genitalia

The female genitalia is roughly divided into two parts, the ovipositor and the internal reproductive organ, the latter of which is composed of ovaries, lateral oviducts, median oviduct, vagina, bursa copulatrix and spermatheca with gland and duct (Figs. 1–2).

The ovipositor is a tubular structure formed by the 8th and 9th segments and their intersegmental membrane. In lepturines, the apical part of the ovipositor is usually strengthened by some baculi which are rod-like sclerotized structure and seem to be useful for protruding the ovipositor. A pair of ventral baculi of the paraproct are almost straight in many cases. The valvifer usually merges with the coxite, but in *Caraphia* of the Xylosteini and *Evodinus* of the Stenocolini, it is distinguished from the coxite because its baculi extend towards the latter without meeting the coxite baculi. The coxite with a pair of baculi is divided into two subcylindrical parts, between the bases of which opens the gonopore. The divided apical parts of coxite, to be called "coxite lobes" in this paper, bear tactile hairs and sensilla, are sclerotized at the inner sides, and surmounted with the styli apically or laterally. Each stylus, possessing tactile hairs at the terminal end, is usually sclerotized except for the apex.

A dorsal pair of baculi extend beyond the apices of the paraproct to the base of the apical part of coxite. At the junction of the intersegmental membrane and the paraproct, there is the proctiger dorsally with a pair of baculi, under which opens the anus. In cerambycid beetles, the proctiger is very short, while it normally extends for the same length as the paraproct in many other families of Coleoptera. HUTCHESON (1980, p. 420) considers that the dorsal baculi functionally replace the baculi that usually strengthen the lateral margins of the proctiger of normal length.

The median oviduct is a single canal behind the junction of the lateral oviducts, each led from ovary, and opens to the vagina at a point enclosed with a pair of accessory plates or lobes. These plates or lobes, usually membraneous but sometimes more or less sclerotized, vary in configuration with species. In previous studies on the female genitalia of cerambycids, however, they were not named nor even recognized. In the present study, therefore, these apparatus will be called "vaginal plates". The vagina opens through the gonopore, while its anterior part forms a membraneous bursa copulatrix, which receives the endophallus of median lobe during copulation. The bursa is either narrow or broad, sometimes rudimentary or even absent. Into the bursa copulatrix or directly into the vagina, the spermathecal duct opens from the spermatheca, which is a curved capsule with sclerotized walls, receives sperm after copulation and stores it till the time it is used for fertilization. The spermathecal gland is always attached to the lateral face of the spermatheca, but position of its attachment varies with species. This gland secretes nutrients for the sperm.

Results

Subfamily Lepturinae

Tribe Xylosteini

Caraphia lepturoides (MATSUSHITA, 1933)

(Fig. 3)

Collecting data of the material used. Amami-Ohshima Is., Ryukyu Islands, 7–V–1977, H. KUSUNOKI leg.

Paraproct short and broad, with straight baculi; valvifer distinct, with its baculi discontinuous to coxite baculi, which are simple; inner distal part of each coxite lobe weakly sclerotized; some tactile hairs present at the apex of the lobe; stylus small and weakly sclerotized, with short tactile hairs; dorsal baculi starting from near the posterior edge of proctiger; proctiger baculi curved at the posterior parts; median oviduct long and narrow, abruptly broadened near the apical end; vaginal plates oval and very broad, constricted at the bases; vagina narrow and more or less broadened anteriorly; bursa copulatrix absent; spermatheca narrow and sharply bent at middle, with thick spermathecal duct lightly constricted 6–8 times, then abruptly curved and directly entering into vagina at the end.

Tribe Encyclopini

Encyclops olivacea BATES, 1884

(Fig. 4)

Collecting data of the material used. Nikkawa-rindô, Yamanashi Pref., 1–VI–

1978, A. TAKASU leg.

Paraproct short and narrow, with its baculi almost straight; valvifer baculi continuous to simple coxite baculi; inner distal part of each coxite lobe weakly sclerotized; stylus weakly sclerotized, with short tactile hairs; dorsal baculi long; proctiger baculi straight; vaginal plates short, narrow and pointed; vagina broad; bursa copulatrix tubular in basal half and ovoid at the apical part; spermatheca sigmoidally curved, with narrow basal portion, which is rectangularly bent and evidently constricted, and strongly curved main part which is narrow but obviously broader than the basal; spermathecal duct thin, imperfectly coiled and entering into the apical part of bursa copulatrix.

Tribe Rhagiini

Rhagium japonicum BATES, 1884

(Fig. 5)

Collecting data of the material used. Shibecha, Hokkaido, 14–VI–1964, H. INOUE leg.

Paraproct rather long, with its baculi feebly sinuate; valvifer indistinct; coxite baculi proximally widened, each coxite lobe ovoid, bearing long tactile hairs and rather heavily sclerotized at the inner part; stylus rather heavily sclerotized except for apex and with long tactile hairs; dorsal baculi short, with their anterior ends widely distant from the posterior edge of proctiger, proctiger baculi long and straight; vaginal plates long and extremely narrow; vagina broad, proximally narrowed but abruptly widened at the anterior end; bursa copulatrix large and elongated ovoid, with narrow basal portion; spermatheca subglobular, transversely folded in at the inner side near the apex, with thin duct entering into bursa copulatrix at its basal third.

Note. The bursa copulatrix is similarly large in the other two Japanese species of the genus, *R. heyrovskyi* PODANÝ and *R. pseudojaponicum* PODANÝ. Perhaps this feature can be regarded as being characteristic of *Rhagium*,

Enoploderes bicolor OHBAYASHI, 1941

(Fig. 6)

Collecting data of the material used. Kominawa, near Mt. Takao, west of Tokyo, 21–IV–1980, M. SAKAI leg.

Paraproct short and narrow; valvifer indistinct; coxite baculi abruptly widened at the base; each apical part of coxite lobe narrow, weakly sclerotized at the inner part and bearing long tactile hairs both laterally and apically; stylus relatively slender

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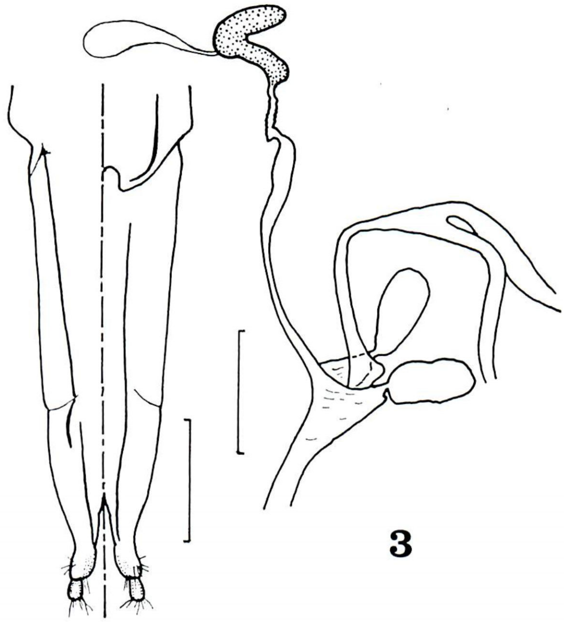
Figs. 3–6. Ovipositor (left half: ventral view; right half: dorsal view) and internal reproductive organ (ventral view). —— 3, *Caraphia lepturoides*; 4, *Encyclops olivacea*; 5, *Rhagium japonicum*; 6, *Enoploderes bicolor*. (Scale: 0.5 mm.)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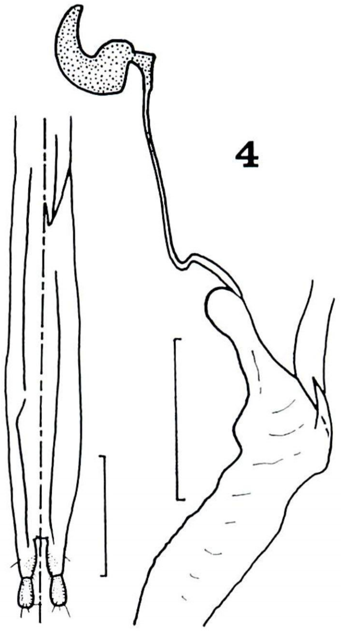
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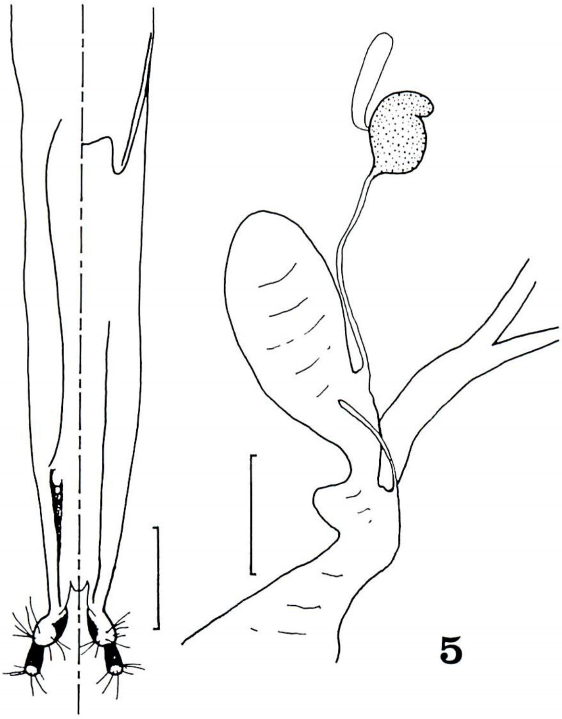
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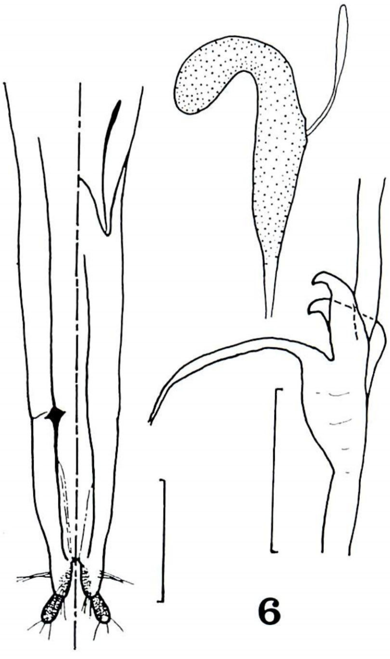
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and weakly sclerotized, with long tactile hairs; dorsal baculi long and very slightly sinuate; proctiger baculi long, rather thick and gently arcuate; vaginal plates broad, sharply hooked at the apices; vagina narrow though widened anteriorly; bursa copulatrix absent; spermatheca large, gradually broadened distad, almost straight in basal two-thirds but strongly curved at the apical part, without visible constriction near the base; spermathecal duct directly entering into bursa copulatrix.

Tribe Stenocorini

Sachalinobia rugipennis koltzei (HEYDEN, 1887)

(Fig. 7)

Collecting data of the material used. Sugenuma, Katashina-mura, Gunma Pref., 23–VII–1978, S. SAITO leg.

Paraproct very long, each baculum with a small sclerotized portion at the lateral sides of the base; valvifer indistinct; coxite baculi thick anteriorly, thin and curved posteriorly; each coxite lobe sclerotized at the inner part and with tactile hairs; stylus long and slender, moderately sclerotized and bearing tactile hairs at the apex; dorsal baculi much shorter than paraproct baculi, their anterior ends being very widely distant from proctiger; proctiger baculi straight; median oviduct long, with tumid apical portion; vaginal plates long and very narrow, somewhat falciform; vagina widened anteriorly; bursa copulatrix large and broad; spermatheca strongly bent, fairly thick in basal two-thirds and narrowed towards apex, with the duct entering into the base of bursa copulatrix.

Stenocorus coeruleipennis (BATES, 1873)

(Fig. 8)

NISHIO, 1959, Kontyû, Tokyo, **27**, p. 211, fig. 4 [*Toxotus*]; KUBOKI, 1980, Kita-Kyûshû no Konchû, Kokura, **27**, p. 102, pl. 7, fig. 1 [*Toxotus*].

Collecting data of the material used. Kohsawa, Katashina-mura, Gunma Pref., 25–VII–1979, A. TAKASU leg.

Paraproct long, with its baculi feebly sinuate; valvifer indistinct; coxite baculi slightly widened at base and curved posteriorly, coxite lobes rather thick, bearing long tactile hairs and weakly sclerotized at the inner part; stylus with tactile hairs small and weakly sclerotized; dorsal baculi short, with their anterior ends widely distant from proctiger and slightly sinuate; proctiger baculi straight; median oviduct long; vaginal plates conspicuously long and narrow, and slightly sinuate; vagina narrow though broadened anteriorly; bursa copulatrix large and narrowed towards basal

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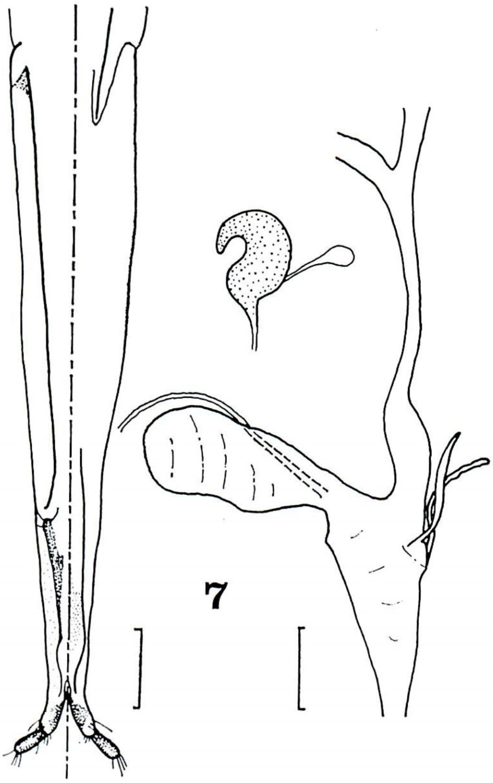
Figs. 7–9. Ovipositor (left half: ventral view; right half: dorsal view) and internal reproductive organ (ventral view). —— 7, *Sachalinobia rugipennis koltzei*; 8, *Stenocorus coeruleipennis*; 9, *Toxotinus reini*. (Scale: 0.5 mm.)



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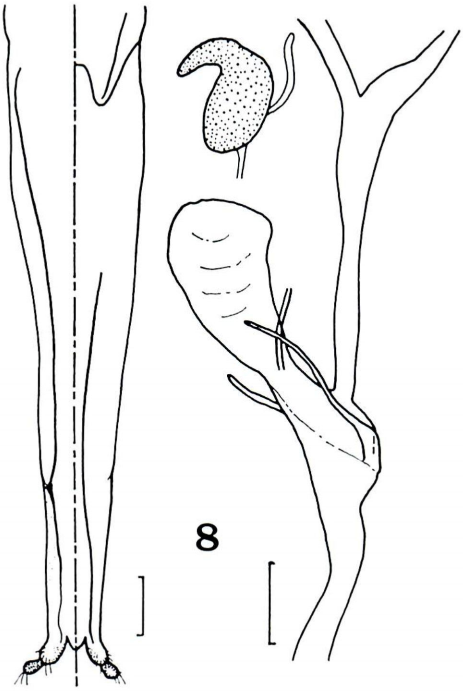

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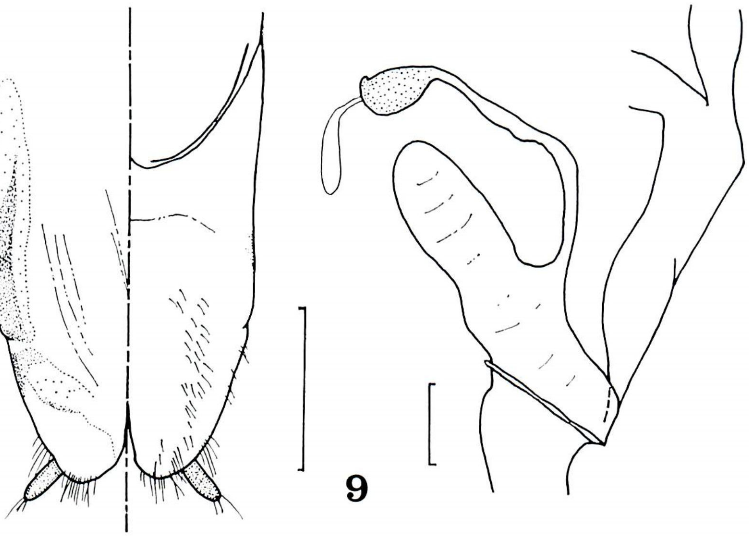

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portion; spermatheca subglobular at basal two-thirds, with apical part strongly hooked and narrowed towards apex; spermathecal duct clearly distinguished from spermatheca and leading to the basal portion of bursa copulatrix.

Toxotinus reini (HEYDEN, 1879)

(Fig. 9)

Collecting data of the material used. Nikkawa-rindô, Yamanashi Pref., 18–VI–1978, A. TAKASU leg.; Shimizu Pass, Gunma Pref., 24–VII–1976, T. SASAMOTO leg.

Paraproct very short and broad, sclerotized along lateral margins in posterior half, without baculi; valvifer indistinct; coxite very broad, sclerotized at lateral portions near the base, without baculi, with each coxite lobe remarkably broad and flattened, many tactile hairs on lateral margins, and surmounted with slender stylus which is abaxially articulated to the latero-apical face of coxite lobe and is weakly sclerotized; dorsal baculi absent; apical part of ovipositor furnished with many tactile hairs dorsally; proctiger baculi gently arcuate; median oviduct broad; vaginal plates long, straight and extremely narrow; vagina broad and moderately widened at the anterior portion; bursa copulatrix large, cylindrical, and not constricted at base; spermatheca subovoid, with a transverse impression at the apico-lateral part; spermathecal duct thick, entering into bursa copulatrix at a position a little before middle.

Pachyta lamed (LINNÉ, 1758)

(Fig. 10)

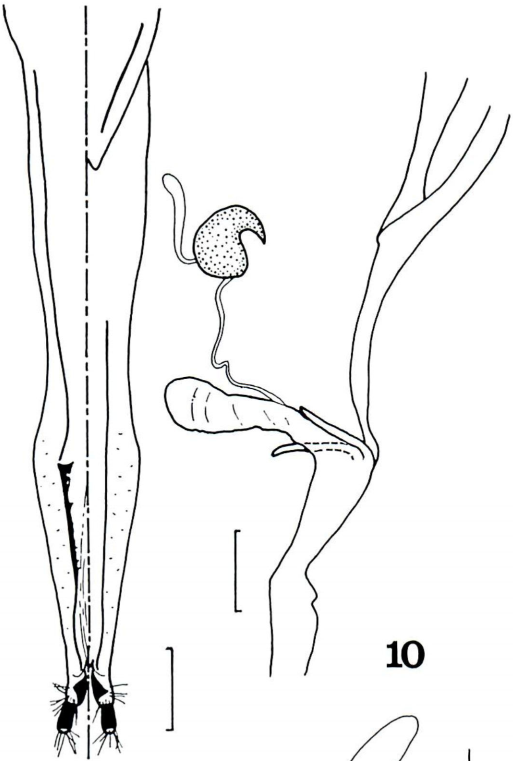
Collecting data of the material used. Horoka, Hokkaido, 27–VII–1972, T. SHIMOMURA leg.

Paraproct rather long, with its baculi feebly sinuate; valvifer indistinct; coxite baculi thick anteriorly, thin and slightly sinuate posteriorly; coxite lobes rather heavily sclerotized at each inner part and with long tactile hairs; stylus long and sclerotized, bearing long tactile hairs; dorsal baculi a little shorter than paraproct baculi, their anterior ends being widely distant from proctiger; proctiger baculi straight; median oviduct narrow; vaginal plates long and narrow, mostly straight; vagina narrow, though slightly broadened at base; bursa copulatrix relatively large and widened towards apex; spermatheca clearly distinguished from the duct, subglobular at the basal part, strongly curved at the apical part which is acuminate; spermathecal duct thin, imperfectly coiled and entering into the basal part of bursa copulatrix.

Brachyta punctata (FALDERMANN, 1833)

(Fig. 11)

Collecting data of the material used. Ohsenjôzawa, Yamanashi Pref., 24–VI–1979, K. SASAKI leg.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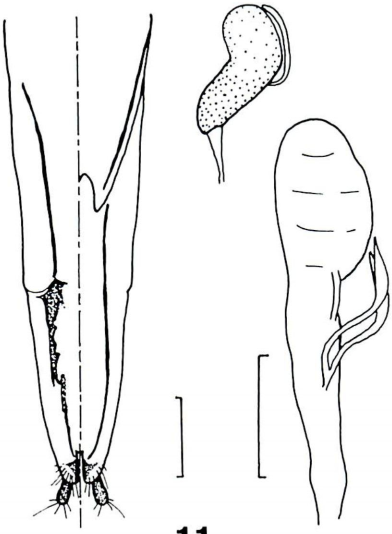
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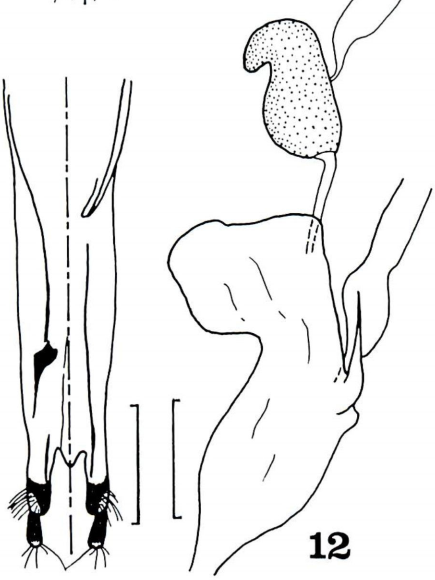
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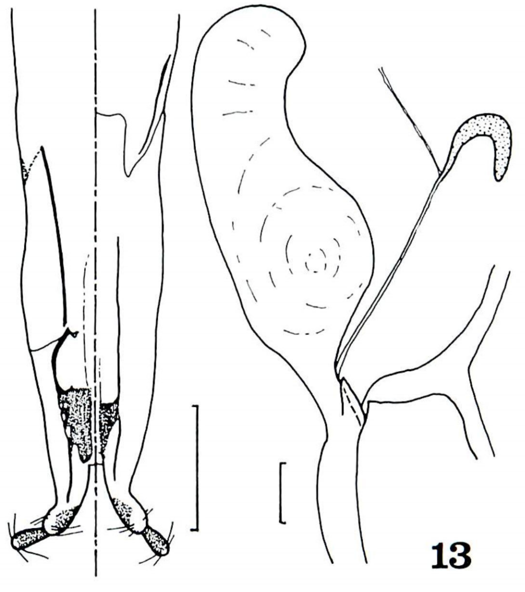
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Figs. 10–13. Ovipositor (left half: ventral view; right half: dorsal view) and internal reproductive organ (ventral view). —— 10, *Pachyta lamed*; 11, *Brachyta punctata*; 12, *Evodinus borealis*; 13, *Gaurotes* (*Paragaurotes*) *doris*. (Scale: 0.5 mm.)

Paraproct short with rather thick baculi; valvifer imperfectly separated from coxite, with its baculi thick and more or less discontinuous to rather thick coxite baculi; coxite lobes sclerotized at each inner part, whose edge is not rounded but almost straight, with long tactile hairs; stylus sclerotized and abaxially articulated to coxite lobe, with long tactile hairs; dorsal baculi fairly short, though longer than paraproct baculi, feebly curved; proctiger very long, with long, rather thick and straight baculi; vaginal plates extremely long, narrow and curved, widened at apical third to form a narrowly lanceolate apical part, whose apex is acute; vagina narrow; bursa copulatrix broad and oval; spermatheca fairly elongate, gently curved, and widened at the apical part, its sclerotization becoming weaker towards apex; spermathecal duct entering into the base of bursa copulatrix.

Note. The characteristically uneven sclerotization of spermatheca is common to the other member of this genus, *B. bifasciata japonica* (MATSUSHITA). Besides, in these two species, each coxite lobe is not rounded at the inner edge and the proctiger baculi are very long.

Evodinus borealis (GYLLENHAL, 1827)

(Fig. 12)

Collecting data of the material used. Tsugaike, Hakuba-mura, Nagano Pref., 30–VII–1979, A. TAKASU leg.; Sugenuma, Katashina-mura, Gunma Pref., 23–VII–1980, M. SAKAI leg.

Paraproct short, with feebly sinuate baculi; valvifer distinct, with its baculi discontinuous to short coxite ones and thickened anteriorly; each coxite lobe widely and rather heavily sclerotized at the inner side, distinctly convex at the inner distal portion, and with long tactile hairs; stylus long and rather heavily sclerotized except for apex, abaxially articulated to coxite lobe, and with long tactile hairs; dorsal baculi almost as long as paraproct baculi; proctiger baculi long; vaginal plates relatively wide at the base but becoming thinner and acicular towards the tip; vagina much widened at the anterior part; bursa copulatrix broad and not much constricted at base; spermatheca broad, with straight outer lateral margin, abruptly curved at the apical part, and blunt at the extremity; spermathecal duct very short, entering into the middle part of bursa copulatrix.

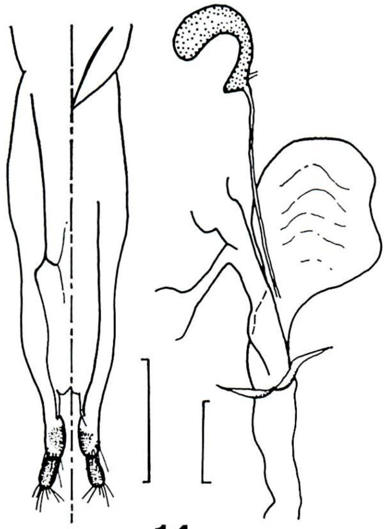
Gaurotes (*Paragaurotes*) *doris* BATES, 1884

(Fig. 13)

KUBOKI, 1980, Kita-Kyûshû no Konchû, Kokura, **27**, p. 102, pl. 10, fig. 27; 1981, Elytra, Tokyo, **9**, pp. 59–60, fig. 1; SAITO, 1984, Gekkan-Mushi, Tokyo, (159), p. 35, text-figs.

Collecting data of the material used. Marunuma, Katashina-mura, Gunma Pref., 25–VII–1980, M. HARADA leg.

Paraproct very short, with its baculi rather thick and almost straight; valvifer



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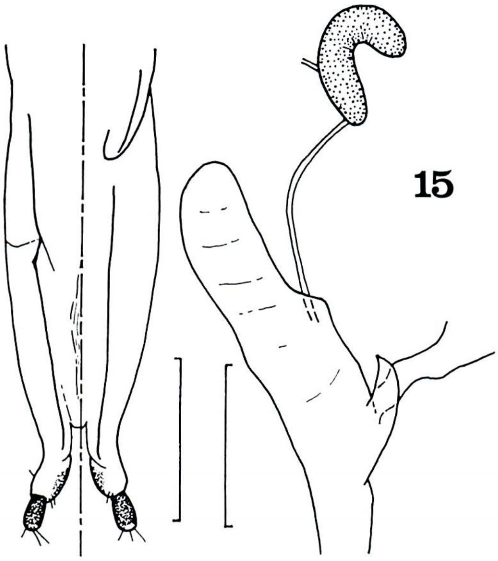

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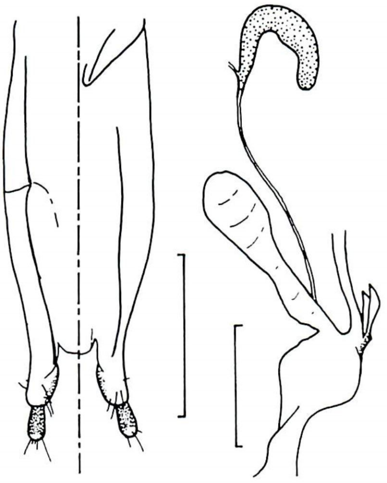

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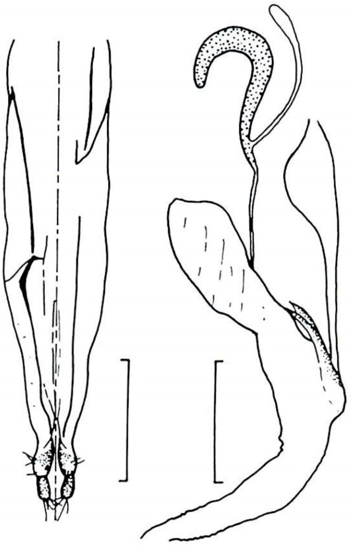

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Figs. 14–17. Ovipositor (left half: ventral view; right half: dorsal view) and internal reproductive organ (ventral view). —— 14, *Gaurotes* (*Carillia*) *atripennis*; 15, *Lemula nishimurai*; 16, *Dinoptera minuta*; 17, *Acmaeops septentrionis*. (Scale: 0.5 mm.)

indistinct; coxite sclerotized at the median part inside of baculi, which are thick and lightly sinuate in basal third and thin in apical third, coxite lobes rather rounded, sclerotized at each inner side, and with some tactile hairs; stylus rather long, with long tactile hairs; dorsal baculi thin, but with inwardly spread sclerotized part just above the sclerotized median part of coxite; proctiger baculi almost straight; vaginal plates fairly wide at the base and simply narrowed to pointed apex; vagina rather broad; bursa copulatrix very large, swollen, widest at proximal third, curved at the apical part, and well constricted at the base; spermatheca narrow and strongly curved, with the gland attached to the lateral side of the base; spermathecal duct narrow and straight, entering into the basal constricted part of bursa copulatrix.

Gaurotes (Carillia) atripennis MATSUSHITA, 1933

(Fig. 14)

KUBOKI, 1980, Kita-Kyûshû no Konchû, Kokura, **27**, p. 102, pl. 10, fig. 28 [*aureopurpurea*], fig. 30; SAITO, 1984, Gekkan-Mushi, Tokyo, (159), p. 35, text-fig.

Collecting data of the material used. Yunohana Spa, Tateiwa-mura, Fukushima Pref., 12–VI–1972, T. SHIMOMURA leg.

Paraproct short, with thin and rather straight baculi; valvifer indistinct; coxite baculi feebly sinuate, with the apical lobes relatively slender, sclerotized at each inner part, and bearing long tactile hairs; stylus slender and sclerotized, with long tactile hairs; dorsal baculi fairly short though still longer than paraproct baculi, with feebly sinuate posterior portions; proctiger baculi rather long and straight; vaginal plates narrow, pointed at the apex, and slightly sclerotized at the base; bursa copulatrix large and constricted at base; spermatheca narrow and curved though widened towards rounded apex, with conically protruding basal part; spermathecal gland attached to near the duct which enters into the basal constricted part of bursa copulatrix.

Lemura nishimurai SEKI, 1944

(Fig. 15)

Collecting data of the material used. Odamiyama, Ehime Pref., 14–V–1972, Y. KUSUNOKI leg.

Paraproct very short with thin baculi; valvifer indistinct; coxite baculi thin and almost straight, coxite lobes relatively broad, weakly sclerotized at each inner part, and bearing short tactile hairs; stylus broad and sclerotized, with long tactile hairs; dorsal baculi almost straight and about twice as long as paraproct baculi; proctiger baculi almost straight; vaginal plates broad, curved and pointed at the apex; vagina narrow; bursa copulatrix subcylindrical, broad and not constricted at base; spermatheca fairly broad and nearly U-shaped; spermathecal duct arising from the lateral side near the base of spermatheca, and entering into the middle part of bursa copulatrix.

Note. Also in the other two Japanese species of the genus, *L. decipiens* BATES and *L. rufithorax* PIC, the paraproct is very short, the stylus is broad, and the spermatheca is U-shaped. Perhaps these features can be regarded as being characteristic of *Lemura*.

Dinoptera minuta (GEBLER, 1832)

(Fig. 16)

Collecting data of the material used. Kotozura, Okutama, west of Tokyo, 17–IV–1980, A. TAKASU leg.; Mizunesawa, Okutama, west of Tokyo, 17–IV–1979, A. TAKASU leg.

Paraproct very short with thin baculi; valvifer indistinct; coxite baculi thin and almost straight; coxite lobes somewhat broad and weakly sclerotized at each inner side, with long tactile hairs; dorsal baculi almost straight and about twice as long as paraproct baculi; proctiger baculi short; vaginal plates somewhat sclerotized at base, narrow, broadened to beyond middle, and then narrowed again towards acute apex; vagina broadened anteriorly, weakly sclerotized at the portion at which attach the vaginal plates; bursa copulatrix long, subcylindrical proximally, and ovoid at the apical part; spermatheca narrow, strongly curved, and slightly broadened at the middle part, with gland attached to near the duct which enters into the basal part of bursa copulatrix.

Acmaeops septentrionis (C. G. THOMSON, 1866)

(Fig. 17)

Collecting data of the material used. Horoka, Hokkaido, 26–VII–1972, T. SHIMOMURA leg.

Paraproct short, rather narrow, with straight baculi; valvifer indistinct; coxite baculi thickened anteriorly, and feebly sinuate posteriorly; coxite lobes weakly sclerotized at each inner part, with tactile hairs; stylus small, weakly sclerotized and with long tactile hairs; dorsal baculi a little longer than paraproct baculi, proctiger baculi straight; vaginal plates long, narrow, gently arcuate, and pointed at the apex, being weakly sclerotized throughout; vagina narrow, more or less widened anteriorly; bursa copulatrix large, subcylindrical and hardly constricted at base; spermatheca narrow and strongly curved, with reflexed basal part; spermathecal gland attached to the lateral side of the basal part; spermathecal duct very short, entering into the middle part of bursa copulatrix.

Macropidonia (Macropidonia) ruficollis PIC, 1901

(Fig. 18)

Collecting data of the material used. Azusayama, Kawakami-mura, Nagano Pref., 12~13–VII–1978, T. SHIMOMURA leg.

Paraproct short with straight baculi which are fairly thick; valvifer indistinct; coxite sclerotized at the median part inside baculi which are very thick and broadened anteriorly, with the apical lobes sclerotized at each inner part and bearing tactile hairs; stylus rather heavily sclerotized, with long tactile hairs at the apex; dorsal baculi slightly arcuate, thickened posteriorly; proctiger baculi thick, more or less arcuate; median oviduct long; vaginal plates short and very narrow, acicular; vagina much widened anteriorly; bursa copulatrix broad, continuing to vagina without constriction; spermatheca broad, curved at middle, and angularly produced at the base; spermathecal gland widely open at the outer corner of the capsule; spermathecal duct thick and rather short, entering into the middle part of bursa copulatrix.

Macropidonia* (*Pseudosieversia*) *japonica japonica (OHBAYASHI, 1937)

(Fig. 19)

Collecting data of the material used. Iwanadome, Shimashimadani, Azumi-mura, Nagano Pref., 4–VIII–1974, W. SUZUKI leg.

Paraproct short with straight baculi; valvifer indistinct; coxite weakly and longitudinally sclerotized on each side of median line to the middle of baculum, which is fairly thick, each coxite lobe relatively broad, weakly sclerotized at the inner part, and bearing long tactile hairs; stylus sclerotized, with long tactile hairs; dorsal baculi feebly sinuate; proctiger baculi rather long and straight; vaginal plates short and broad, acute at the apex; vagina narrow, almost rectangularly curved near the base; bursa copulatrix small, subtriangular, with depressed anterior face; spermatheca subovoid, with the small apical part almost rectangularly curved; spermathecal duct thick, sinuate, and entering into the anterior concavity of bursa copulatrix.

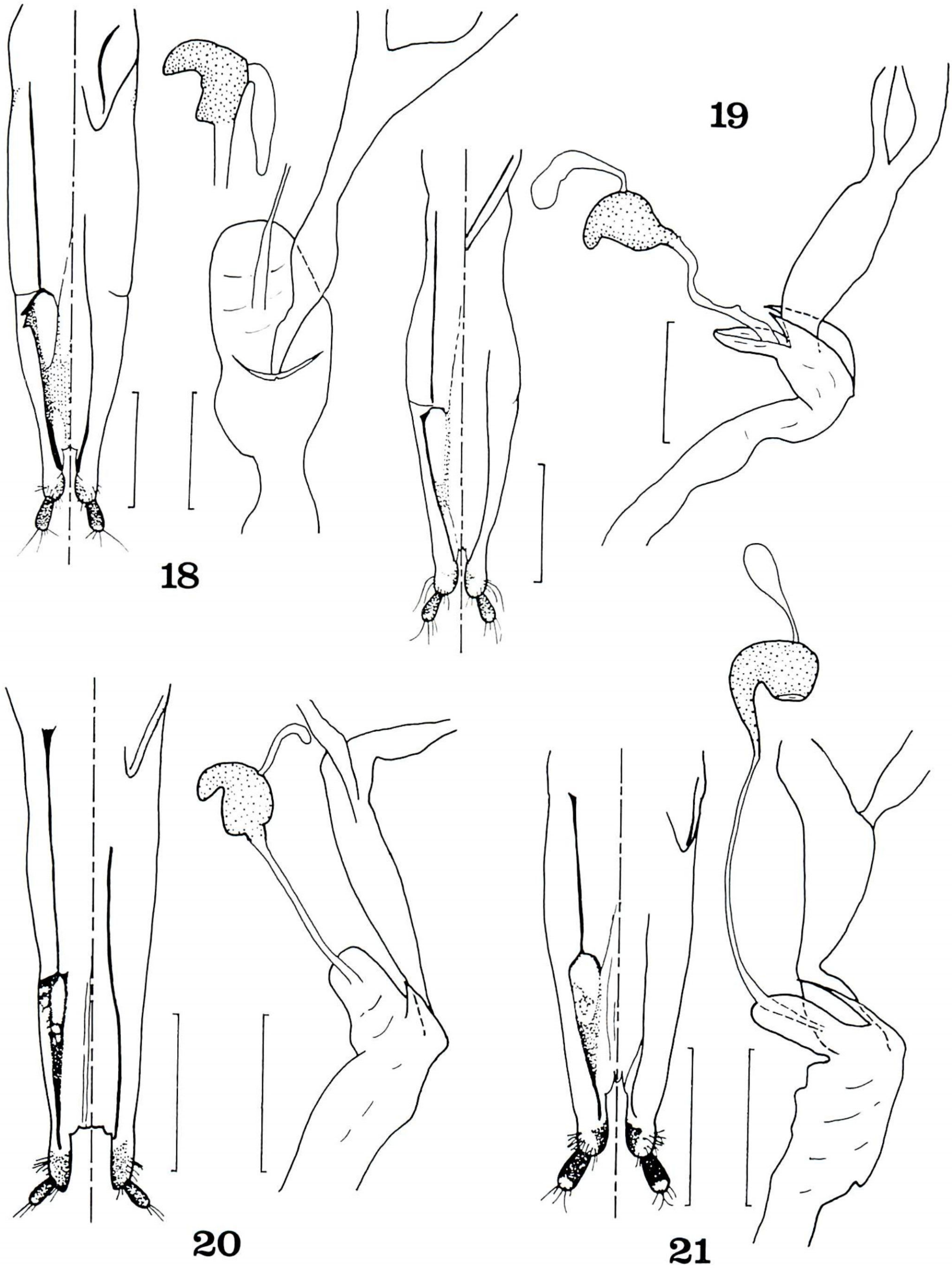
Pidonia* (*Pidonia*) *obscurior obscurior PIC, 1901

(Fig. 20)

KUBOKI, 1981, Kontyû, Tokyo, **49**, p. 527, fig. 3; S. & A. SAITO, 1984, Sayabane, Tokyo, (10), p. 12, fig. 7 S1.

Collecting data of the material used. Marunuma, Katashina-mura, Gunma Pref., 24–VII–1978, A. TAKASU leg.; Sugenuma, Katashina-mura, Gunma Pref., 21–VII–1979, A. TAKASU leg.

Paraproct of moderate length, baculi straight and thickened at base; valvifer indistinct; each coxite baculum longitudinally twofold before middle, then gradually narrowed towards apex, forming a wide sclerotized part in median third, the external branch laterally spread out at the basal portion and the sclerotization reaching the side margin; each coxite lobe rather lightly sclerotized at the inner part, obtusely pointed at the apex, and bearing tactile hairs; stylus abaxially articulated to the lateral face of coxite lobe, small and narrow, rather lightly sclerotized, with tactile hairs at the apex; dorsal baculi more or less thick; proctiger baculi straight; vaginal plates short,



Figs. 18–21. Ovipositor (left half: ventral view; right half: dorsal view) and internal reproductive organ (ventral view). —— 18, *Macropidonia* (*Macropidonia*) *ruficollis*; 19, *Macropidonia* (*Pseudosieversia*) *japonica japonica*; 20, *Pidonia* (*Pidonia*) *obscurior obscurior*; 21, *Pidonia* (*Cryptopidonia*) *insuturata*. (Scale: 0.5 mm.)

scalene triangular, with acute apex; vagina somewhat broad; bursa copulatrix short and wide, gradually narrowed towards rounded apex; spermatheca ovoid, strongly curved at the apical part, and constricted near the base; spermathecal duct rather thick, entering into the middle part of bursa copulatrix.

Note. Besides the species described above, I have examined the female reproductive organs of the following species which include five Taiwanese and one European forms: *P. yamato* HAYASHI et MIZUNO, *P. semiobscura* PIC, *P. matsushitai* OHBAYASHI, *P. shikokuana* HAYASHI, *P. limbaticollis limbaticollis* (PIC), *P. bouvieri* PIC, *P. paradisiacola* KUBOKI, *P. mutata* (BATES), *P. sylvicola* KUBOKI, *P. signifera* (BATES), *P. discoidalis* PIC, *P. shikokensis shikokensis* CHÛJÔ et HAYASHI, *P. meridionalis* KUBOKI, *P. deodara* KUBOKI, *P. bivittata* S. SAITO, *P. signata* MATSUSHITA, *P. grallatrix* (BATES), *P. major* S. SAITO and *P. lurida* (FABRICIUS). They are fundamentally identical with one another at least in basic comformation of spermatheca and ovipositor.

Pidonia* (*Cryptopidonia*) *insuturata PIC, 1901

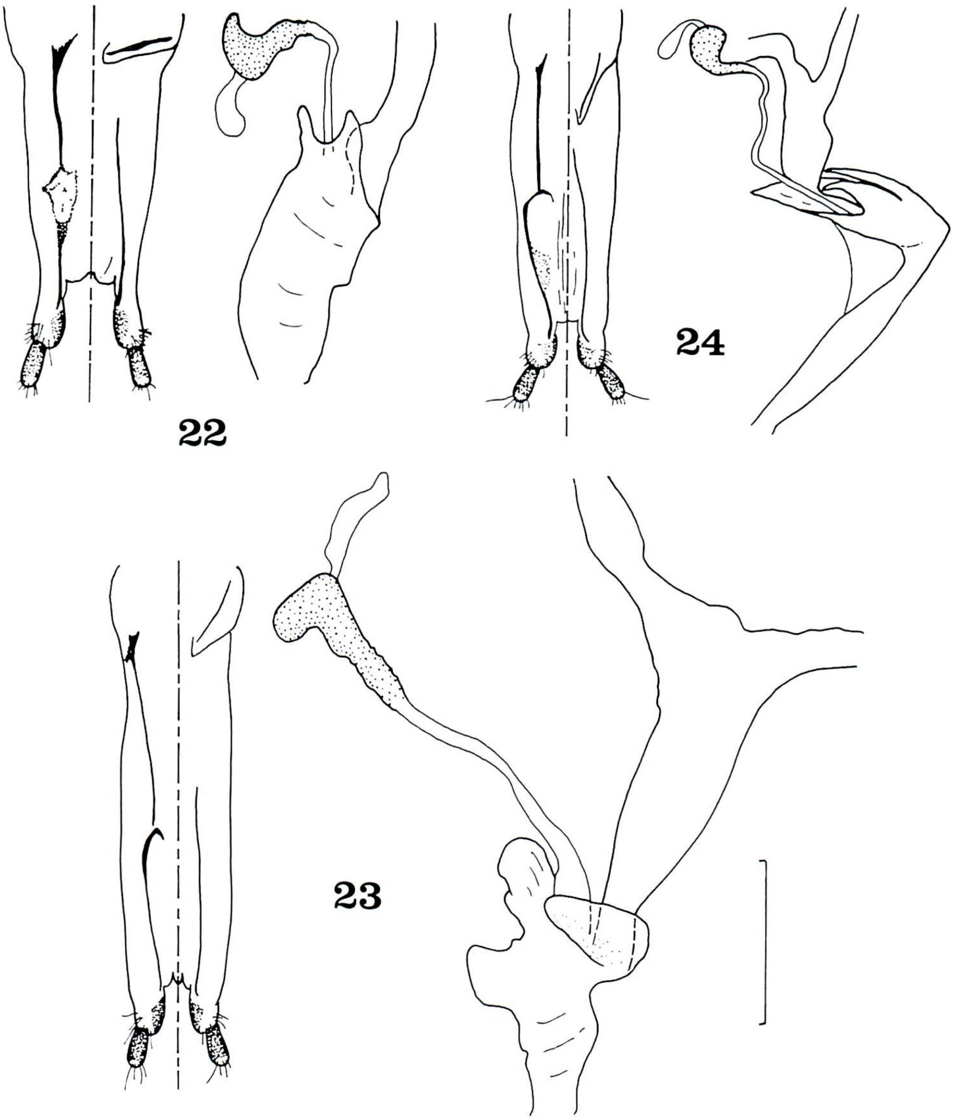
(Fig. 21)

KUBOKI, 1981, Kontyû, Tokyo, **49**, p. 527, fig. 30.

Collecting data of the material used. Marunuma, Katashina-mura, Gunma Pref., 22–VII–1978, A. TAKASU leg.; same locality, 25–VII–1979, A. TAKASU leg.

Paraproct short and broad, with straight baculi which are relatively thick; coxite gradually narrowed towards the apical part, each baculum widely divided at the base, the outer branch extending straight to apex, the inner one becoming obscure at a short distance from the base but a lightly sclerotized line is continuous, gradually approaches to the outer branch and joins it at middle, forming an elongate triangular area of sclerotization; coxite lobes broad and rounded, sclerotized at each inner part, with tactile hairs; stylus broad, sclerotized except for apex, and with tactile hairs; dorsal baculi feebly sinuate behind; proctiger baculi relatively short and straight; vaginal plates very narrow, acicular at the apical part; bursa copulatrix small and simple; spermatheca shaped like a tabacco pipe, with the duct entering into bursa copulatrix at its apex but continuing into it for some distance.

Note. Besides *P. insuturata* described above, I have examined the female reproductive organs of the following seven species, which are currently considered to belong to two different lineages because of discrepancy in colour pattern and other external characters: *P. hayashii* KOIKE, *P. masakii* HAYASHI, *P. hylophila hylophila* KUBOKI, *P. simillima* OHBAYASHI et HAYASHI, *P. amentata amentata* (BATES), *P. miwai* (MATSUSHITA) and *P. approximata* KUBOKI. The same trend of diversification is observed in the spermathecae, but their ovipositors are basically identical with one another irrespective of the difference of supposed lineages.



Figs. 22–24. Ovipositor (left half: ventral view; right half: dorsal view) and internal reproductive organ (ventral view). —— 22, *Pidonia* (*Cryptopidonia*) *oyamae*; 23, *Pidonia* (*Mumon*) *aegrota aegrota*; 24, *Pidonia* (*Omphalodera*) *testacea*. (Scale: 0.5 mm.)

Pidonia* (*Cryptopidonia*) *oyamae (OYAMA, 1908)

(Fig. 22)

KUBOKI, 1980, Kita-Kyûshû no Konchû, Kokura, **27**, p. 104, pl. 10, fig. 4; 1981, Kontyû, Tokyo, **49**, p. 427, fig. 37.

Collecting data of the material used. Marunuma, Katashina-mura, Gunma Pref., 21–VII–1979, A. TAKASU leg.; same locality, 22–VII–1980, A. TAKASU leg.

Paraproct extremely short, with thick baculi widely dilated anteriad; valvifer indistinguishable; coxite somewhat narrowed towards apex, its baculum mal-defined in basal half, being represented by an irregularly ring-like line of light sclerotization widely divergent at the basal part and then gradually convergent to the middle, behind which the baculum is rod-like and fairly thick; coxite lobes long, broad and rounded, sclerotized at each inner part, and with short tactile hairs; stylus large, bearing tactile hairs at the apex; dorsal baculi nearly a half as long again as paraproct baculi, slightly sinuate, and gradually thickened towards the posterior end; proctiger baculi rather thick and straight; vaginal plates broad at the base and rapidly narrowed towards blunt apex; vagina broad; bursa copulatrix small and finger-shaped; spermatheca somewhat comma-shaped, broadest at middle and strongly curved, with several constrictions at the narrow portion near the base; spermathecal duct very short and fairly thick, entering into the base of vagina; spermathecal gland rather widely open to the lateral face of spermatheca.

Note. I have also examined the female reproductive organs of the following two species and found no fundamental difference from those of *P. oyamae*: *P. chujoi* OHBAYASHI et HAYASHI and *P. fujisana* OBIKA et KUSAMA.

Pidonia* (*Mumon*) *aegrota aegrota (BATES, 1884)

(Fig. 23)

KUBOKI, 1981, Elytra, Tokyo, **9**, p. 60, fig. 2 [*debilis*]; 1981, Kontyû, Tokyo, **49**, p. 527, fig. 39 [*debilis*]; S. & A. SAITO, 1986, Sayabane, Tokyo, (11), p. 44, fig. 4 S1 [*aegrota kubokii*].

Collecting data of the material used. Nikkawa-rindô, Yamanashi Pref., 16–VII–1978, A. TAKASU leg.

Paraproct short and fairly narrow, with thin baculi dilated at the anterior end; valvifer indistinct; coxite not narrowed before branching into coxite lobes, its baculum thick anteriorly, divided at the base and with very short inner branch, the outer branch simple and slightly sinuate posteriad; coxite lobes sclerotized at each inner part, and with tactile hairs; stylus of moderate size, sclerotized except for the apex, and bearing tactile hairs; dorsal baculi short and thin, almost as long as paraproct baculi, and slightly sinuate near the two ends; proctiger baculi thin and slightly curved; median oviduct broad; vaginal plates very broad, nearly isosceles triangular with blunt apex, and somewhat sclerotized at the posterior part; vagina broadened at base; bursa copulatrix small and ovoid; spermatheca broad, rectangularly curved at apical third, and not narrowed towards the apex, with some constrictions at the basal portion, and with the gland attached to the outer corner; spermathecal duct very thick, directly entering into vagina with a wide orifice.

Note. Other than the Japanese species described above, I have examined the female genitalia of the two Taiwanese species, *P. amabilis* KUBOKI and *P. confusa* S. SAITO. Their coxites are almost parallel-sided before branching into lobes, and the coxite baculi are relatively simple without bearing accessorily sclerotized area or lines. These can be regarded as being peculiar to the subgenus *Mumon*.

Pidonia (Omphalodera) testacea (MATSUSHITA, 1933)

(Fig. 24)

KUBOKI, 1981, Kontyû, Tokyo, **49**, p. 527, fig. 42.

Collecting data of the material used. Mt. Daibosatsu, Yamanashi Pref., 16–VII–1978, A. TAKASU leg.; Sugenuma, Katashina-mura, Gunma Pref., 22–VII–1979, A. TAKASU leg.

Paraproct short and fairly narrow, with thick baculi somewhat dilated at the anterior end; valvifer indistinguishable; coxite relatively narrow, its baculum thick, divided at the base and with very short inner branch, the outer branch sinuously extending to apex and bearing a subtriangular sclerotized portion at the inner side of the middle; coxite lobes broad and rounded, sclerotized at each inner part, and with tactile hairs; stylus of moderate size, sclerotized except for apex, and with tactile hairs; dorsal baculi longer than paraproct baculi, almost straight for the most part but feebly sinuate near the two ends; proctiger baculi almost straight; vaginal plates unguiform, acute at the apex; vagina narrow, rectangularly bent and compressed near the base, and thinly lobate inside; bursa copulatrix small, subtriangular, with depressed anterior face, and acute at the apex; spermatheca small and comma-shaped, with rounded apical part; spermathecal gland open to near the apex of spermatheca; spermathecal duct wavy, entering into the base of vagina.

Notes. The subgenus *Omphalodera* comprises two known Japanese species, *P. testacea* and *P. puziloi* (SOLSKY). I have dissected females of both the species, and found that their genitalia are basically identical.

KUBOKI (1981) gave illustrations of the spermathecae for 42 species of the genus *Pidonia* (including some foreign forms), and erected a new subgenus, *Cryptopidonia*. He noticed in his key to the subgenera that the spermathecae are "minutely striated, funneled proximally" in *Cryptopidonia* but "smooth, truncated proximally, with several constrictions" in *Pidonia* (s. str.). Other than the genitalic features, he only pointed out body form and shape of elytral apices as key characters of these subgenera, so that his chief concern must have been in the difference in conformation of spermathecae.

A similar result was gained by my study of the ovipositor. In the species belonging to the subgenus *Cryptopidonia*, the paraproct is very short, the coxite lobes are broad with rounded apices, and each stylus is large and articulated to the apex of the coxite lobe. The paraproct is particularly short in the species of the *oyamae* group, a feature which is not comparable with any species of the other groups of *Pidonia*. In the species belonging to the subgenus *Pidonia* (s. str.), the paraproct is rather long, the coxite baculi are definitely twofold at the basal part, the coxite lobes are obtusely pointed at the apices, and each stylus is small and abaxially articulated to the apex of the coxite lobe. In the species of the subgenus *Mumon*, the coxite with its baculi is rather simple in conformation, a feature which appears unique in the whole genus.

In short, the ovipositor can be adopted as an important character for classifying *Pidonia* species into subgenera or species-groups, just like conformation of spermathecae.

[Note] Japanese abstract and references to the present paper will be given at the end of the second part.

Elytra, Tokyo, **17** (1): 87–90, May 15, 1989

Discovery of a New Cerambycid Beetle of the Genus *Cyrtoclytus* (Coleoptera, Cerambycinae) in the Malay Peninsula

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Abstract A new cerambycid beetle of the genus *Cyrtoclytus* is described from the central mountains of the Malay Peninsula. It is characterized by the slender and parallel-sided body, small pronotum, and elongate elytra with two yellow pubescent bands on the pre- and post-median parts. It is the southernmost species within the genus as well as the first representative known from the peninsula.

Only two species of *Cyrtoclytus* have been known from Indochina, but three more species occur in the areas bordering Indochina. The former two species are: *Cyrtoclytus callizonus* (GAHAN, 1906, p. 251, fig. 91) from Upper Burma and *C. tazoei* NIISATO (p. 297, figs. 1–4) from northern Thailand; and the latter three species are: *C. yunamensis* (PIC, 1906, p. 18) and *C. luteomarginatus* (PIC, 1914, p. 18) from Yunnan, and *C. ventripennis* (PIC, 1908, p. 61) from Yunnan and Szechuan. In this paper, I am going to describe an additional species discovered on the central mountains of the Malay Peninsula.

This new species has no relationship with the other Indochinese congeners, and is rather similar in general appearance to *C. capra* (GERMAR, 1824, p. 518), which is widely distributed in Europe, Siberia, North China, Korea and Sakhalin. It is hardly specialized in the conformation of body as shown in *C. callizonus* and *C. tazoei*, the latter of which has a robust body with relatively long and stout appendages. Besides, its occurrence in the Malay Peninsula is very interesting from the zoogeographical point of view. The locality of this clytine beetle, Genting Highland of Pahang, is situated at a higher place of the central mountains of the Malay Peninsula. It is strikingly apart from the distributional range of *C. tazoei*, which has so far been considered the species marking the southernmost periphery of the generic distribution, by a distance of more than 1,500 km.

Before going further, I wish to express my hearty thanks to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for his constant guidance and reading the original manuscript of this paper, and to Mr. Koichi MATSUMOTO of the Laboratory of Entomology, Tokyo University of Agriculture, for his offer of material and useful information. The abbreviations used herein are already explained in previous papers of mine (*e.g.*, NIISATO, 1987, p. 297).

Cyrtoclytus matsumotoi sp. nov.

(Fig. 1)

Female. Small species with slender and subparallel body form, with small prothorax, and thin and relatively short legs. Colour black to blakish chocolate brown, slightly shiny; head black with yellowish brown mouth-parts except for mandibles; antennae dark yellowish brown though slightly infuscate on segments 5–11; elytra black, reddish apically, each decorated with rather vague pale maculations, a small spot near external margin of basal sixth, an oblique incomplete band on basal third, and a transverse band on apical third; legs dark yellowish brown though darkish on femora. Body largely clothed with reddish brown to pale yellow pubescence; head with dense cream-yellow pubescence on sides of frons and along the posterior margin of occiput; antennae densely with reddish pubescence, the pubescence becoming sparser on segments 1–5, segments 2–5 provided with sparse row of reddish hairs on respective undersides; pronotum rather sparsely with long reddish hairs, and thinly with cream-yellow pubescence on each side of apical and basal margins; scutellum with pale pubescence; elytra densely with reddish brown pubescence and sparsely with long pale hairs, each provided with an oblique cream-yellow band on basal third and a transverse

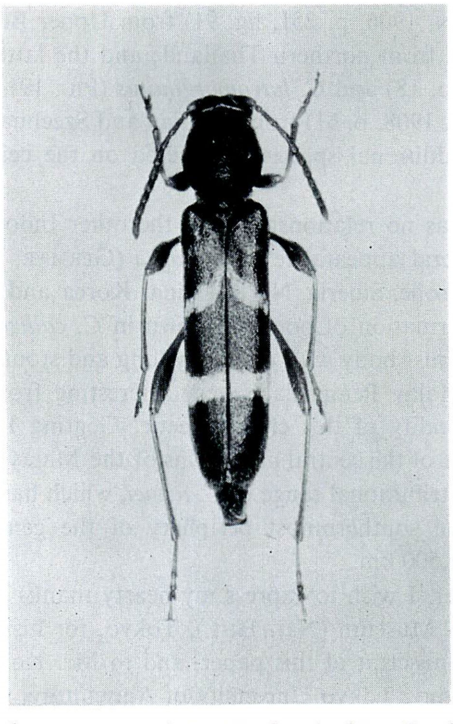

Fig. 1. *Cyrtoclytus matsumotoi* sp. nov., female, from Genting Highland of the Malay Peninsula.

band of the same colour on apical third, and also thinly with pale yellow pubescence on middle of basal sixth and apical narrow part; venter of thorax densely with pale pubescence, partially with dense yellow pubescence at the sides of mesosternum and the posterior parts of metathorax; abdomen sparsely with pale hairs, and with cream-yellow pubescence along the posterior margins of sternites 1–3; legs moderately with long pale hairs.

Head rather voluminous, HW/PA 1.12, coarsely rugose throughout; frons moderately dilated apically, weakly convex near middle, with a weak longitudinal median furrow, FL/FA 1.10; clypeus rather long and wide, smooth; vertex weakly swollen, with antennal cavities separated by a little more than three-fifths the maximum width of head; occiput rather strongly convex posteriorly; genae large, a little more than two-thirds the depth of lower eye-lobes. Antennae relatively short and slender, reaching basal eighth of elytra, moderately thickened distally; scape not so thick, hardly clavate and weakly arcuate, a little longer than segment 3, segment 2 a little longer than wide, segments 3 and 4 weakly thickened apically, the former one and one-third the length of the latter, segment 5 slightly dilated apically, terminal segment one and three-fifths the length of segment 10 and bluntly pointed apically.

Pronotum fairly small, slightly longer than wide, moderately constricted towards apex and base; PL/PA 1.35, PL/PW 1.07, PB/PA 0.89, PL/EL 0.31, PB/EW 0.68; sides weakly and sinuately dilated to before middle, then arcuately narrowed towards base; apex slightly arcuate and broadly truncate; disc moderately convex, slightly impressed at the sides near middle, densely and coarsely granulose throughout. Scutellum triangular, moderately convex.

Elytra slender and very long, almost parallel-sided, EL/EW 3.00; sides with less prominent humeri, very weakly emarginate near basal fourth, almost parallel at a level between basal four-fifteenths and apical fifth, then arcuately narrowed to apices which are roundly truncate; disc almost flattened, distinctly concave near scutellum, coarsely punctured though the punctures are weaker in apical two-thirds.

Prosternum moderately vertical posteriorly, rather coarsely granulose, with prosternal process rather weakly vertical ventrad. Mesosternum and mesepisterna more heavily granulose than on prosternum, with mesosternal process moderately raised. Metasternum coarsely granulose. Abdomen weakly though rugosely punctured.

Legs thin and fairly short, length of hind femur and tibia combined 0.91 times as long as elytra, with hind femur compressed and moderately clavate in apical two-thirds.

Body length: 11.2 mm.

Holotype female, Genting Highland, 1,800 m alt., Malay Peninsula, Pahang of West Malaysia, 3–III–1988, K. MATSUMOTO leg. (preserved in the collection of the National Science Museum (Nat. Hist.), Tokyo).

Notes. Because of the less specialized body conformation, the true affinity of *C. matsumotoi* is not certain. Externally, however, it has some diagnostic characters in common with *C. capra*, the type species of the genus.

The unique holotype specimen of this interesting new species was collected on the peak of Genting Highland which is 1,800 m in altitude. The clytine came flying to the light at night together with other beetles.

要　約

新里達也: キスジトラカミキリ属のマレー半島からの発見. ――インドシナ地域におけるキスジトラカミキリ属の既知種は, ビルマ北部の *C. callizonus* (GAHAN) とタイ北部の *C. tazoei* NIISATO, および近隣では中国南西部より3種が知られていたが, 今回, これらのカミキリムシの既知分布域からはるかに南にあたるマレー半島中央山地より1新種を記載し, *C. matsumotoi* と命名した. 本種は, インドシナ地域のほかの種とは異なり, 極東からヨーロッパにかけて広く分布する *C. capra* (GERMAR) にむしろ類似している.

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Elytra, Tokyo, **17** (1): 91–93, May 15, 1989

オイワケクロコメツキの形態について

大　平　仁　夫

Notes on the Morphological Structure of *Ampedus* (*Ampedus*) *oiwakensis* (Coleoptera, Elateridae) from Japan

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Abstract　*Ampedus* (*A.*) *oiwakensis* Ôhira, 1974, was originally described from Asama-kôgen, Gunma Pref., Honshu, based on two male specimens. Some important structures of this unique species examined by SEM-images (Fig. 2) facilitate its recognition. Female characters are reported for the first time.

オイワケクロコメツキ *Ampedus* (*Ampedus*) *oiwakensis* Ôhira, 1974 は，群馬県の浅間高原で採集された2雄個体にもとづいて，1974年に筆者が新種として記載した体長10 mm内外の黒色の種である．しかし，原記載から今日まで，本種についての記録は青森県があるだけで，本種の実体についてはほとんど知られていないし，雌個体については不明であったので，ここに雌雄の形態について明らかにしておきたいと思う．

本文を草するにあたり，標本について種々ご支援をいただいた東京都の鈴木　亙博士に心から感謝の意を表する．

成虫の形態

雄．体長は9～10 mm内外．体は幅広くて両側は平行状，黒色で光沢を有し，前胸背板はオパール色の光彩を欠く．触角は黒色 (基部3節は黒褐色) で肢は黒色～黒褐色 (跗節は暗褐色)．体下面は黄褐色毛を，体背面は黒色毛を生ずる．また，頭部と前胸背板上にはやや長い毛を叢生する．

前頭横隆線の前縁中央部は抑圧されて扁平状，縁取りは弱く，ややV字形状を呈する (Fig. 2 I)．触角は短かく，末端は前胸背板の後角よりやや長い程度である．第2節は短小で幅よりやや長く，第3節は第2節の約1.5倍の長さで倒円錐形状，第4節は多少とも鉈状を呈し，第3節の約1.7倍の長さ，これら第2, 3節を合わせたものは第4節よりわずかに長い (Fig. 2 E)．

前胸背板は梯形状で，幅と長さはほぼ等しい．背面は膨隆し，円形の深い点刻をまばらに一様に分布する (Fig. 2 B)．後角はやや後外方に突出し，背面には明瞭な1隆起線を有する (Fig. 2 C)．小盾板は楕円形状で幅より長く，両側は湾曲して末端に向かい漸次細まる (Fig. 2 D)．前胸腹板突起は，前肢

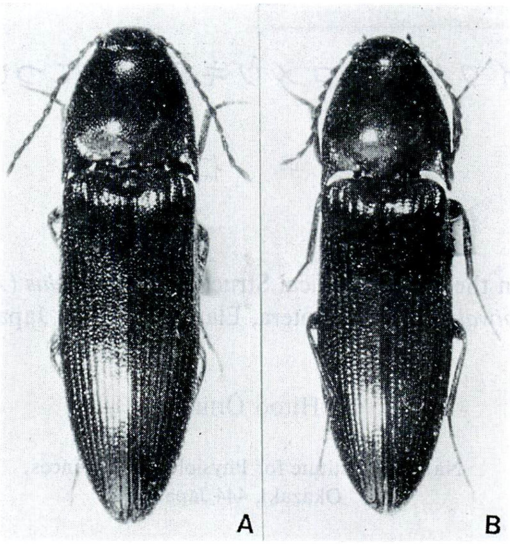

Fig. 1. *Ampedus* (*A.*) *oiwakensis* Ôhira; A, male from Yamanashi Pref. (body length 9.5 mm); B, female from Yamanashi Pref. (body length 10 mm).

基節腔を越えて弱く内方へ湾曲し，末端近くで直角状に段刻されて細まる (Fig. 2 M).

上翅の条線はやや浅く印刻されるが，深い点刻を列生する．間室部は扁平状で，小点刻と弱いしわを生ずる．腰板は図示したようで，内方部は幅広くて両側は平行状，外縁の中央部で鈍く角ばり，外方へ漸次細まる (Fig. 2 H).

雄交尾器の末端部の背面からみた外形は図示したようである (Fig. 2 J). 中央突起は末端に向かって漸次細まり，表面には小点刻を散布する (Fig. 2 K). 側突起の末端部は細長い三角形状で，外縁は直線状に外角部へ伸長，外角部には 10 個内外の小段刻を生ずる (Fig. 2 L).

雌．一般外形は雄に類似するがやや大形で，体長は 11 mm に達する個体がある．触角はより短かく，末端は前胸背板の後角より明らかに短かい．また，第 3 節はより細長く，第 4 節は鋸状をしていない (Fig. 2 G). 内部生殖器の bursa copulatrix の袋内にある刺毛片は細長く，30 本内外を生ずる．刺毛片の 1 本の外形は図示したようである (Fig. 2 N).

あとがき

本種は，上翅が黒色をした本属の種のうちでは幅広い体形を有し，触角の第 3 節が短小であるなど，比較的特徴がつかみやすいように思われる．また，筆者が判断したところでは，本種は中部山岳地帯から東北地方にかけての山岳地帯に広く分布しているようである．

なお，ここに図示した成虫の雌雄個体 (Fig. 1 A–B) は，山梨県北巨摩郡須玉町増富において，1971 年 5 月 23 日に山口就平氏が採集されたもので，分解図 (Fig. 2) も上記と同じ場所で 1970 年 5 月 24 日に採集されたものを示した．

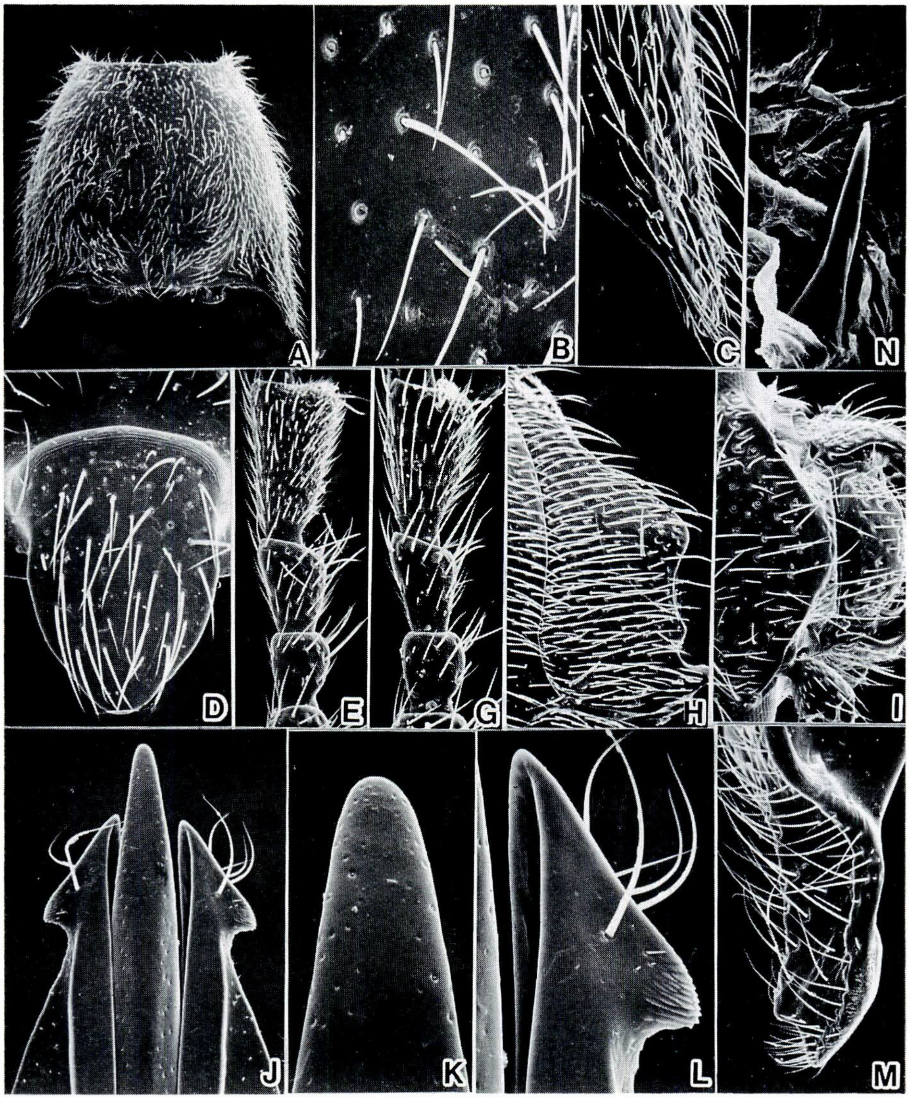

Fig. 2. *Ampedus* (*A.*) *oiwakensis*, male (except for G and N which are females).—— A, Pronotum, dorsal aspect; B, some punctures on the disk of pronotum; C, hind angle of pronotum; D, scutellum; E, G, 2nd to 4th segments of antennae; H, basal plate; I, clypeal margin; J, aedeagus, dorsal aspect; K, same, median lobe (enlarged); L, same lateral lobe (enlarged); M, prosternal process, lateral aspect.

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Elytra, *Tokyo*, **17** (1): 94, May 15, 1989

新刊紹介

「動物分類学入門」佐々治寛之著，UP Biology，74．vi+124 ページ；1989年1月25日発行，東京大学出版会．1,400 円．

「種とは何か，種と種の関係はどのように決められるのか，系統とは何か，といった分類学の意義と方法論の原理が，豊富な例をひいて平易に解説される．生物学を志すすべての人に，基礎となる1冊」，本書の宣伝コピーをそのまま引用してしまったが，内容はまさにそのとおり，手もとに置いておくと便利な小冊子である．本誌で著者の佐々治博士を紹介する必要はないと思うが，30年近く福井大学で教鞭をとられた著者が，もっとも必要と感じていた教科書を自分で作ってしまった，といったところだろうか．

構成は次の7章から成り立っている．1）分類学の成立と発展；2）種の概念；3）分類学的形質とその評価；4）系統進化と分類体系；5）種分化；6）学名；7）分類・同定の実践．

本書は大学で生物学を専攻する学生を対象として書かれているが，実例はほとんど昆虫を材料とし，われわれにはなじみのあるものが登場してくるので親しみやすいし，著者の専門とするテントウムシ類は，さすがといった感じで，なかなか読ませる．ただ，種の概念の章で，命名規約上の「種」を解説しているが，純粋にテクニカルなこの問題をこの章で扱うと，命名という行為が生物学と遊離している，という誤解を生じないかと危惧される．あとに学名の章があるのだから，そこで解説したほうがよかったのではなかろうか．しかし，問題提起として，わざと第2章にもっていったのかもしれない．そのへんのところは一度，著者に確かめてみたいと思っている．

ところで，内容とは関係ないのだが，本書を紹介しようとして引用でたいへん困ったことがあった．タイトルの「動物分類学入門」はもちろん問題ない．それに，“UP Biology” というシリーズ名があり，番号もついている．ところがこの番号が，本書のカバー，表紙，扉，奥付などにまったく出てこないのは，どうしたことだろうか．本の末尾に「UP バイオロジーシリーズ」として，既刊のタイトルと著者の表があり，これでやっと番号を知ることができた．また，いわゆる『腰巻』の部分のリストにも番号が出ているが，これで引用するのは無理である．それに，「UP Biology」，「UP バイオロジー」，「UP バイオロジーシリーズ」の表記が見られて，どれを採用してよいかわからないし，番号も『巻』なのか『号』なのかはっきりしない．『腰巻』に『巻』とあったので，とりあえずは『巻』を使えそうだが，これはやはり『号』の方がよいと思うし，「UP Biology」と英語表記なら『No.』であろう．なお，蛇足であるが，東京大学出版会へ送る『読者カード』には，「UP バイオロジー 74」となっていた．ここまでくると勝手にしろといいたくなる．

(大和田　守)

Elytra, Tokyo, **17** (1): 95–96, May 15, 1989

An Additional Note on *Cleomenes longipennis* (Coleoptera, Cerambycinae)

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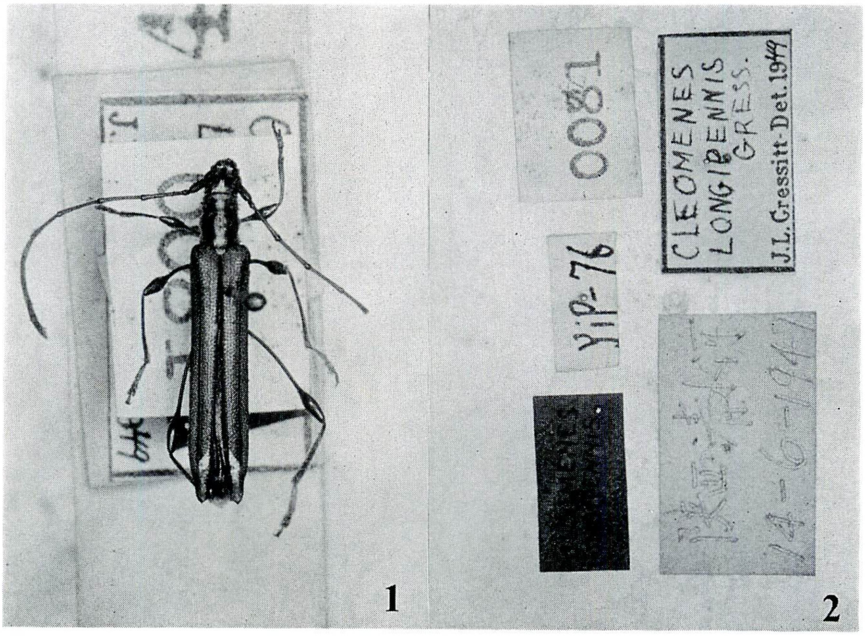
In a previous paper (1988, pp. 189–190), I recorded *Cleomenes longipennis* GRESSITT from Taiwan and commented that a slight difference was observed between the Taiwanese specimens and the continental Chinese ones. At that time, I made the comparison on the basis of a pair of Taiwanese specimens and the original description. Through the courtesy of Mr. C.-C. KUAN of National Chung Hsing University, Taiwan, I was able to examine GRESSITT's type of the species during my recent visit to Taiwan. My direct comparison revealed that the specimens from the two localities showed no difference except for their body size. It is therefore necessary to correct my previous opinion.

Continental specimen examined. Female (Holotype), Tsing-sui-ho, Shengsi Prov., NW China, 14–VI–1947, S.-T. CHANG leg.

Type depository. Collection of the late Prof. S.-T. CHANG, Department of Entomology, National Chung Hsing University, Taichung.



Figs. 1–2. *Cleomenes longipennis* GRESSITT; 1, holotype, female; 2, labels for the same specimen.

I wish to thank Mr. C.-C. KUAN for his kind help for my examination of the late Prof. S.-T. CHANG's collection.

Reference

NIISATO, T., 1988. *Cleomenes longipennis* (Coleoptera, Cerambycinae) newly recorded from Taiwan. *Kontyû, Tokyo*, **56**: 189–190.

Elytra, *Tokyo*, **17** (1): 97–98, May 15, 1989

オサムシ亜目の新しい分類体系（論文紹介）

DEUVE, T.: Étude phylogénétique des Coléoptères Adephaga: redéfinition de la famille des Harpalidae, sensu novo, et position systématique des Pseudomorphinae et Brachinidae. *Bull. Soc. ent. Fr.*, **92**: 161–182 (1988).

甲虫類のうちで，オサムシ亜目のものほどさまざまな角度から研究されてきた分類群は例が少ない．古くから多くの研究者によって検討された結果，その分類体系は大筋で異論の少ないものとなり，位階の問題を別にすれば，JEANNEL (1941–'42) により集大成されたと思われていた．分類方式の変遷については，BALL (1979) によって詳述されているが，比較的小さい問題を除けば，処遇のはっきりしないのはセスジムシ類とホソクビゴミムシ類だけで，全体として穏当な分類体系に落ちついている，と考えられていたのである．したがって，ERWIN と SIMS (1984) によって提唱された新しい分類体系は，多くの点で意表をつく衝撃的なものであった．その内容と従来の体系との異同については，甲虫談話会の例会で紹介したことがある．

ところが昨年になって，これともまた異なるオサムシ亜目の分類体系が公表された．ここに紹介する DEUVE の研究がそれで，おもに雌における見掛け上の末端腹背板が形態学上の第何節に相当するかという問題と，尾腺が第 8–9 節間膜のどこに開口するかという点とに着目して，科や亜科の系統関係を推定し，分類体系を組み直したものである．

この著者の研究によると，オサムシ亜目の甲虫類は，末端腹背板の由来からみておおむね次の 3 群に大別される．

1) オサムシ型: 第 9 腹節の背板が見掛け上の末端腹背板になり，第 8 腹節の背板は部分的に陥入しているが，前縁に筋肉を付着させる突起をもたない．— この型は，狭義のオサムシ科 Carabidae とヨシボソゴミムシ科 Siagonidae のみにみられる．

2) マルクビゴミムシ型: 第 8 腹節の背板が見掛け上の末端腹背板になり，第 7 節の下側へ陥入しない．— この型は，ムカシゴミムシ科 Trachypachidae，ゲンゴロウ科 Dytiscidae やミズスマシ科 Gyrinidae などの水生食肉類全部，カワラゴミムシ科 Omophronidae，マルクビゴミムシ科 Nebriidae，ヘンゲゴミムシ科 Migadopidae，ハンミョウモドキ科 Elaphridae，ツノヒゲゴミムシ科 Loriceridae，ヒゲブトオサムシ科 Paussidae，オレヒゲゴミムシ科 Hiletidae およびオオキバゴミムシ科 Promecognathidae を含む．また，原則的にこの型でありながら，第 8 腹節の分化が不十分なものあるいは変異のあるものに，ヒョウタンゴミムシ科 Scaritidae，アリモドキゴミムシ科 Apotomidae などがあり，ニオイゴミムシ科 Psydridae やホソミズゴミムシ科 Melaenidae では，種類によってこの型のものと次のゴミムシ型のものとがみられる．

3) ゴミムシ型: 第 8 腹節の背板が見掛け上の末端腹背板になり，部分的にまたは全体が第 7 背板の下側へ陥入して，前縁に一対の筋肉を付着させる突起をそなえる．分化の進んだものでは，第 7 腹節の背板が見掛け上の末端腹背板になり，第 8 背板はその下側へ完全にもぐりこんで，膜質の部分でつながった一対の細長い節片に変わっている．— この型は，ニオイゴミムシ科の一部と，オサムシモドキ科 Broscidae，チビゴミムシ科 Trechidae およびゴミムシ科 Harpalidae にみられる．

これらの 3 型のほかに，特殊な進化を遂げたのでどれにもはいらないものがいくつかある．a) そのひとつはハンミョウ科 Cicindelidae で，雌の末端腹背板は第 7 腹節の背板で形成され，第 8 背板は深く陥入して産卵管の一部になっている．雄では，第 8 腹節の背板が見掛け上の末端腹背板になっている．b) ホソクビゴミムシ科 Brachinidae では，雌雄とも第 8 腹節背板の後端部が末端腹背板になり，第 7 背板の下側への可動性が大きい．c) セスジムシ科 Rhysodidae は，マルクビゴミムシ型

の腹部をもっているが，第2腹板が後基節を広く隔てている点で特異である．この特徴は，ミジンゴミムシ科 Gehringiidae にもみられる．

以上の腹背板の構造と密接な関係をもっているのが尾腺の開口部の位置で，見掛け上の末端腹背板の可動性に応じて変化する．第8腹節の背板に可動性の少ないもの，つまりオサムシ型やマルクビゴミムシ型の腹部をもつものでは，尾腺が第9腹節背板の前縁に接して開くが，第8腹節背板の前縁に筋肉の付着点となる突起をもつもの，つまり見掛け上の末端腹背板の可動性が大きいゴミムシ型の腹部をもつものでは，尾腺が第8腹節背板の後縁に接して開く．ニオイゴミムシ科の一部やチビゴミムシ科は中間の状態にあり，尾腺が第8–9節間膜の第8節寄りに開口する．また，アリモドキゴミムシ科は，腹節背板の構造が不完全ながらマルクビゴミムシ型であるにもかかわらず，尾腺は第8腹節の背板に接して開くし，オサムシモドキ科は，ゴミムシ型の腹節背板をもつにもかかわらず，尾腺が第9腹節の背板に接して開口する．

このように，中間段階で例外的なものはあるけれども，オサムシ亜目の甲虫類は「下等な」群と「高等な」群とに大別され，後者にはニオイゴミムシ科，チビゴミムシ科およびゴミムシ科の3科のみが含まれる．とくにゴミムシ科は，オサムシ亜目の既知種の半数以上を含む大きい群でありながら，明らかな単系統群で，独立した1科と認めるのが妥当な措置であろうと結論されている．この新しい定義によるゴミムシ科は，Jeannel が Conchifera と名づけた群に，ゴキブリゴミムシ亜科 Pseudomorphinae を加えたものである．ゴキブリゴミムシ亜科は，ホソクビゴミムシ類とともに，通常オサムシ主科の最後におかれるが，腹節背板や尾腺の構造からみると，疑いもなくゴミムシ科に含まれるべきものだということである．

一方，ホソクビゴミムシ科をヒゲブトオサムシ科の姉妹群だと考える最近の傾向を，著者は強く支持している．ホソクビゴミムシ類とアトキリゴミムシ類とのあいだには，前脛節の化粧器官の位置以外になんの共通点もなく，腹部の構造はホソクビゴミムシ類が「下等な」群の一員であることを明瞭に示している．オサムシ亜目のうちで，尾腺から発砲する習性をもつのは，ホソクビゴミムシ科とヒゲブトオサムシ科だけであり，分泌される液体の組成も同じで，ほかのゴミムシ類のものと大きく異なっている．この事実も，両者をごく近縁の群だと考える重要な根拠になっている．

要するに，オサムシ亜目の「下等な」群に属する甲虫類は，「高等な」群のものに比べてはるかに多様な分化をしている．そのうちから水生群だけを取り出していくつもの異なった科に配列し，残りを「高等な」ゴミムシ類と合わせて単一の科にまとめるのは，分岐学の観点から明らかにおかしい，というのが著者の主張である．

動物の分類体系は系統関係の分析に基づいて組み立てられるべきだ，という考えに異論を唱える研究者はまずないだろう．しかし，この考えを推し進めると，実情に即さない弊害が出てくることも事実である．そのよい例が四足脊椎動物の場合で，系統的な分岐のみに基づいて分類すると，爬虫類は完全に分解してしまう．分岐学的にどれほど正しくても，恐竜やワニを鳥類に含めるのが現実的でないことは明らかだろう．

Deuve の提唱した新しい分類体系が，今後ひろく受けいれられていくかどうかはわからない．しかし，この論説には，きわめて重要な問題がいくつも含まれている．そのひとつは，古くからわかっていたことだが，以前に広義のオサムシ亜科と呼ばれ，Jeannel によって Simplicia という群にまとめられた甲虫類が実は多系統であり，とくに狭義のオサムシ科が，マルクビゴミムシ類やハンミョウモドキ類などとは系統の異なるものだ，と証明されたことである．もうひとつは，ホソクビゴミムシ類が，オサムシ主科の最上位から最下位の近くまで移され，ヒゲブトオサムシ科と共通の祖先から分化したものだと認定されたことである．狭義のゴミムシ科が単系統群だという主張とともに，これらの見解は今後，多くの研究者の賛同を得ることになるだろうと思われる．

(上野俊一)

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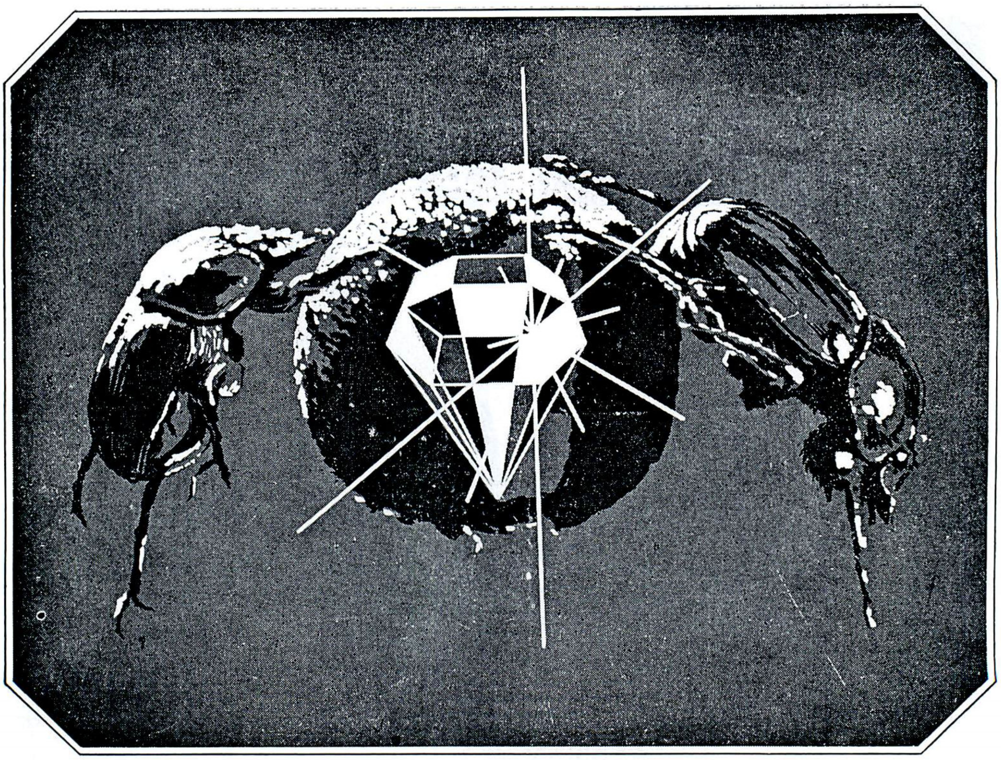

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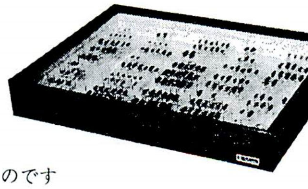

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